2003

Northwest Area Fire Weather Annual Operating Plan

Seattle

Portland

Medford

Spokane

Pendleton

Boise

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NEW FOR 2003:

- **SPOT FORECASTS FOR PRESCRIBED FIRE**

The National Weather Service offices in the Northwest area now require that a representative belt weather kit weather observation be taken from the proposed burn site before a fire weather spot weather forecast will be issued. Spot forecasts are considered valid for twelve hours beyond the time of planned ignition. Updates will be issued upon request only.

- **NON FEDERAL - NON WILDFIRE SPOT FORECAST SUPPORT**

Spot forecasts are available year-round to all Federal, State and Local government entities for wildfire suppression, prescribed burns (for hazardous fuel reduction), search and rescue missions, HAZMAT incidents, or for any other land management activity that directly supports federal resources or the safety of civilians and forest workers. Spot forecasts cannot be provided to Local and State governments for non-fire/range management activities such as spray projects, road building, tree planting, recreational events, and prescribed burns (other than for hazardous fuel reduction) that do not have the potential to escape and threaten life and property.

- **WEB LINK OREGON MAPS (Courtesy of Oregon Department of Forestry)**

Small Oregon statewide version:

http://www.odf.state.or.us/DIVISIONS/protection/fire_protection/smoke/fwz_sm.jpg

Greater detail Oregon statewide version:

http://www.odf.state.or.us/DIVISIONS/protection/fire_protection/smoke/fwz.jpg

2003

Seattle Fire Weather

Office Plan

National Weather Service
7600 Sand Point Way N.E.
Seattle, Washington 98115

Seattle Fire Weather

NEW IN 2003

The modernized fire weather zone boundaries, proposed in 1997 and approved by the Weather Working Team of the Pacific Northwest Wildfire Coordinating Group, remain in effect for 2003.

A map showing the new fire weather zone boundaries can be found with the detailed descriptions of the zone boundaries near the end of this operating plan.

Location

The National Weather Service Forecast Office in Seattle is located at the NOAA Western Regional Center in northeast Seattle.

Hours

The National Weather Service Office in Seattle is open 24 hours a day. The fire weather desk will be staffed by an experienced fire weather forecaster between the hours of 7:00 a.m. and 5:00 p.m. daily during the fire season - normally June through October in Western Washington. Forecast service during the off-season will be provided by staff meteorologists. Forecast service during the "off-season" will be available Monday-Friday. Phone briefings will be available on a 24/7 basis from November through May. Requests for spot forecasts or phone briefings after hours will be handled by staff meteorologists trained in the fire weather forecasting. The exact date for the switch from a weekdays only to a seven-days-a-week operation varies each year based on spring weather conditions and user requirements. Changing from the "off-season" level of service to the "fire-season" level of service will be made upon user request.

Phone Numbers

- **Fire Weather Desk (206) 526-6088**
- Jim Prange, Focal Point (206) 526-6095 ext 252
- Andy Haner Asst Focal Point (206) 526-6095 ext 251
- FAX (206) 526-6094

Other National Weather Services Offices

- Portland (503) 326-2420
- Spokane (509) 244-5031
- Pendleton (541) 276-8134

Seattle Fire Weather (continued)

E-Mail

jim.prange@noaa.gov
andrew.haner@noaa.gov

Internet

Our Internet home page can be found at:

http://www.wrh.noaa.gov/Seattle

Click the fire weather link on the main menu to access fire weather products.

Statewide, Internet-based, fire weather briefings will be conducted Monday through Friday at 9:30 a.m. during the fire season. Additional Internet briefings may be conducted during critical fire weather episodes as coordinated with the land management agencies. Contact this office for the appropriate telephone number and conference ID to participate in the conference calls.

Requested for spot forecasts can be made via our Internet web site at http://www.wrh.noaa.gov/Seattle. Completed forecasts will be posted to the web server within half an hour of the original request. This provides a "one-stop-shopping" method for requesting and obtaining spot forecasts. The Internet web site is the preferred format for requesting Spot Forecasts. Please notify the NWS Seattle if no spot forecast is posted after 30 minutes.

Forecast District

The Seattle Fire Weather Office has forecast responsibility for most state and federal land in Western Washington. Forecast service for the Gifford Pinchot National Forest south of a line from Mt. St. Helens to Mt. Adams to the Oregon border, is handled by the Portland Fire Weather Office. The Seattle fire weather district is divided into 5 distinct districts for fire weather forecasting. The area is further divided into 13 separate fire weather zones. Each fire weather zone is comprised of at least 3 fire weather stations that exhibit similar weather and/or weather changes. However, not all of the stations report on a regular basis.

Forecast Products

PRESUPPRESSION AND LAND MANAGEMENT FORECASTS

Routine land management forecasts are issued to federal land management agencies during the "off season" from mid-October to mid-June. Land management forecasts are available in WIMS or on the Internet Monday through Friday by 9:00 a.m. During the "fire season", twice-daily, pre-suppression forecasts are issued by 8:30 a.m. and 3:30 p.m. NFDRS zone trend forecasts will be issued with the afternoon pre-suppression forecast during the fire season.

Seattle Fire Weather (continue).

Forecast Products (cont)

FIRE WEATHER WATCHES AND RED FLAG WARNINGS

General information about Fire Weather Watches and Red Flag Warnings is included in the main portion of this operating plan.

Fire Weather Watches and Red Flag Warnings will be issued when the Energy Release Component, as described by the National Fire Danger Rating System, is equal to or above the 90th percentile value in the frequency distribution of historical ERCs, and the following conditions described below are either occurring or forecast to occur within the next 72 hours. The table below shows the 90th percentile ERC values that will be used for each fire weather zone.

	90th Percentile ERC
Zone 649:	**17**
Zone 650,651,653,656, 657	**25**
Zone 652,654,655,658,659	**31**
Zone 661	**34**
Zone 662	**57**

Strong East Winds and Low Humidity (Westside zones only)

Nighttime hours (midnight to 7 am):

Duration:	*5 hours*
Wind Speed:	*20 ft /10 minute average wind greater than or equal to 10 mph*
RH:	*less than or equal to 35%*

Daytime hours (7 am to midnight):

Duration:	*4 hours in an 8 hour block*
Wind Speed:	*20 ft/10 min average wind greater than 10 mph*
RH:	*less than or equal to 30%, except less than or equal to 25% on the Gifford-Pinchot NF south of the Cowlitz River.*

c **Strong Westerly Winds and Low Humidity** (Eastside Zone 662)

Duration:	*at least 4 hours*
Wind Speed:	*20 ft /10 minute average wind greater than or equal to 15 mph*
RH:	*less than or equal to 25%.*

Stehekin and Camp Four RAWS will be used to verify Red Flag Warnings in zone 662.

The conditions described above should be fairly widespread in both time and space across the fire weather zone - as opposed to an isolated incident or a diurnal occurrence that lasts for only a few hours.

Note: Since many fire weather stations in Western Washington do not show good exposure to strong east winds, a Red Flag Warning during east wind episodes will verify if the above-mentioned wind criteria is reported by at least 3 of the following stations: Ellis Mt., Minot Peak, Greenwater, Lester, Stampede Pass, or Kosmos Mountain. Historical fire weather records indicate these sites are key indicators of strong east winds and low relative humidities.

c **Lightning**

Dry lightning (LAL 6) occurs when the environment below the cloud base is so dry that passing thunderstorms produce little or no precipitation at the surface. A Fire Weather Watch or Red Flag Warning will be issued for this event when the zone-averaged ERC is in the 90th percentile and dry-lightning is either expected or already occurring. The activity must be more than isolated within a particular zone, and fewer than two stations in the zone report 0.25" of rainfall from the passing thunderstorms on the west side of the Cascades and 0.20" in zone 662 on the east side of the Cascades. A Watch or Warning will also be issued for the occurrence of lightning, either wet or dry, after an extended dry spell.

Each potential Red Flag event will be coordinated with local land management agencies to ensure environmental conditions are sufficiently critical to justify the issuance of a watch or warning.

TRANSPORT AND STABILITY FORECASTS

Transport and stability forecasts will be appended to every presuppression and land management forecast issued by Seattle. These forecasts include information on air mass stability, afternoon mixing heights of surface-based air, and free air winds from 3,000 feet to 7,000 feet.

SPOT FORECASTS

Spot forecasts are available year-round to all Federal, State and Local government entities for wildfire suppression, prescribed burns (for hazardous fuel reduction), search and rescue missions, HAZMAT incidents, or for any other land management activity that directly supports federal resources or the safety of civilians and forest workers. Spot forecasts cannot be provided to Local and State governments for non-fire/range management activities such as spray projects, road building, tree planting, recreational events, and prescribed burns (other than for hazardous fuel reduction) that do not have the potential to escape and threaten life and property.

Information required by the fire weather forecaster from the requesting agency is found on WS Form D-1, items 1-12. Spot forecasts for wildfire suppression will take precedence over normal, office routines.

Agencies Served

The Seattle Fire Weather Office serves the following state and federal land management agencies:

United States Forest Service - Olympic National Forest, Mt. Baker-Snoqualmie National Forest, Gifford-Pinchot National Forest

National Park Service - North Cascades National Park, Olympic National Park, Mt. Rainier National Park, San Juan Islands National Park

Bureau of Indian Affairs - Olympic Peninsula Agency, Puget Sound Agency

Washington Department of Natural Resources - Resource Protection Division, Northwest, Olympic, South Puget Sound, and Central regions.

FIRE WEATHER ZONE BOUNDARY DESCRIPTIONS

A detailed map of the fire weather zone boundaries is included at the end of this section.

Zone 649: The western boundary of fire weather zone 649 is the Pacific coastline in Clallam, Jefferson, and Grays Harbor counties. The eastern boundary includes all Federal, State and private land within 5 miles of the Pacific coastline in Clallam, Jefferson, and Grays Harbor Counties. It extends south along the eastern border of the Makah Indian Reservation and the east shore of Ozette Lake to the town of Quillayute in Clallam County. In Jefferson County, the eastern boundary crosses US Highway 101 approximately 5 miles east of the Hoh Indian Reservation, then parallels the coast south until crossing US Highway 101 again along the border between Jefferson and Grays Harbor counties 5 miles inland from the coast. The eastern border continues south in Grays Harbor county until it crosses highway 101 at New London and US Highway 12 approximately 5 miles east of Aberdeen. The boundary then turns south, following US Highway 101 to the southern border of Grays Harbor county.

Zone 650: Zone 650 includes all State, Federal and private land 5 miles inland from the coast to an elevation of 1500 ft on the western side of the Olympic Mountains in Clallam, Jefferson, and Grays Harbor Counties. The area includes the low elevation portion of the Calawah, Bogachiel, Hoh, Clearwater, Queets, Quinault, and the Humptulips River drainages below 1500 ft. The southern boundary begins where the Humptulips River crosses the southern boundary of Zone 652, stretching southwest along the Humtulips River until it intersects the eastern boundary of zone 649 in Grays Harbor County.

Zone 651: The western boundary of zone 651 follows the Humptulips River and the eastern boundary of zone 649 in Grays Harbor County. The 1,500 foot contour interval on the south side of the Olympic Mountains forms the northern border of zone 651. The county line between Grays Harbor County and Pacific County forms the southern boundary. The eastern border follows the West Fork of the Satsop River south across US Highway 12 near the town of Satsop, continuing south along the west side of the Lower Chehalis State Forest. Zone 651 is mostly State and Private land, but also includes Forest Service land below 1500 ft in the Humptulips and Wynochee River drainages.

Zone 652: Zone 652 includes US Forest Service, National Park Service, and Washington State lands at or above 1500 feet located in the western half of Clallam and Jefferson counties, and the far northeast corner of Grays Harbor county. The area includes the Pacific Ranger District office on the west and southwest side of the Olympic National Forest. Zone 652 is the wetter, west side of the Olympic Peninsula that reflects a greater influence of marine air in both weather and fire danger. The area includes all private, federal and state lands at or above 1,500 feet drained by the Calawah, Sitkum, Bogachiel, Hoh, Clearwater, Queets, Quinault, and Humptulips rivers in Clallam, Jefferson, and Grays Harbor counties.

Zone 661: Zone 661 is the newly-formed zone that includes private, federal and state land at or above 1,500 feet on the east side of the Olympic Peninsula. The area typically exhibits higher fire danger than zone 652, due to less rainfall, less influence of marine air, and a higher occurrence of lightning activity. The area includes lands at or above 1,500 feet drained by the Wynochee, Satsop, North and South Fork Skokomish, Hamma Hamma, Duckabush, Dosewallips, Quilcene, Dungeness, and the Elwha rivers.

Zone 653: Zone 653 includes all lands below 1500 ft msl on the north side of the Olympic Peninsula from the town of Sekiu on the west to a point just south of Discovery Bay on the east. The boundary extends southeast across Admiralty Inlet, east across the northern tip of the Kitsap Peninsula and Puget Sound to Interstate 5 along the border between King and Snohomish Counties. The eastern boundary of zone 653 parallels I-5 north through Snohomish,Skagit and Whatcom counties to the Canadian border.

Zone 654: Zone 654 includes lowland areas below 1,500 feet near the central and southern portion of Puget Sound and Hood Canal. The eastern boundary parallels I-5 south though King and Pierce counties, west through Olympia in Thurston County, then northwest along U.S. Highway 101 to city of Shelton. The boundary continues northwest form Shelton to the southeast corner of the Olympic National Forest in Mason County, then follows the 1500 ft contour northeast along the Hood Canal in Mason and Jefferson Counties.

Zone 655: The eastern border of zone 655 follows the West Fork of the Satsop River south across US Highway 12 near the town of Satsop, continuing south along the west side of the Lower Chehalis State Forest to the town of Brooklyn in northeast corner of Pacific County. From Brooklyn the boundary extends southeast to the town of Pe El in the eastern portion of Lewis County and then continues southeast to the town of Vader in Lewis County. The border then runs east along the southern border of Lewis county to the 1,500 foot contour interval along the west slopes of the Cascades. The boundary follows the contour on the north and south sides of the Cowlitz river valley. It then continues north along the 1,500 foot contour to the boundary between Thurston and Lewis Counties. The zone boundary then extends east to the intersection of Pierce, Thurston, and Lewis Counties. It then follows the Pierce/Thurston County boundary northwest to the intersection of I-5 and then west along I-5 to US Highway 101. Zone 655 then extends northwest paralleling 101 to the southeast corner of the Olympic National Forest in Mason County. The area includes the Capitol State Forest and the Lower Chehalis State Forest.

Zone 656: Zone 656 includes all State and Private lands in Whatcom, Skagit, and Snohomish Counties east of I-5 below an elevation of 1500 feet. This includes the following river drainages.....North, Middle and South Forks of the Nooksack River, Skagit River from town of Sedro Woolley to the town of Marblemount (including Lake Shannon and Baker Lakes in the Baker River drainage), Sauk River from the confluence of the Sauk and Skagit Rivers south along SR 530 to the town of Darrington, the Stillaguamish River from Darrington to the town of Arlington, and the Skykomish River along US Highway 2 from the town of Monroe to six miles east of the town of Skykomish.

Zone 657: Zone 657 includes land below 1500 ft east of I-5 in King and Pierce Counties. The southern border of the zone follows the border between Pierce and Thurston Counties. This area includes the following river valleys below 1500 ft that reach into the Cascade Mountains...North, Middle and South Fork of the Snoqualmie River, White River including Mud Mountain Lake, Puyallup River, and the Nisqually River to the town of Ashford.

Zone 658: Zone 658 includes Federal, State and Private lands at or above 1500 feet in Whatcom, Skagit, Snohomish, and the northeast portion of King County in the Skykomish River drainage. The area includes the North Cascades National Park and the Ross Lake National Recreational Area east of the Cascade crest,, and the Mt. Baker, Darrington, and Skykomish Ranger Districts of the Mt.Baker-Snoqualmie National Forest. The eastern boundary is the Cascade crest.

Zone 659: Zone 659 includes Federal, State and Private lands at or above 1500 ft in King, Pierce, and Lewis Counties, and the extreme northern portion of Skamania County. This includes the North Bend and White River Ranger Districts of the Mt. Baker-Snoqualmie National Forest, Mt. Rainier National Park, and the Cowlitz Valley Ranger District of the Gifford Pinchot National Forest. The eastern boundary of this zone runs along the crest of the Cascades.

Zone 662: Zone 662 includes federal lands managed by the North Cascades National Park east of the Cascade crest in Chelan county. This area includes the Lake Chelan National Recreational Area and the North Cascades National Park South Unit.

ZONE 649

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Quillayute	450120	DNR	Metar	48.00	124.50	S07-28N-14W	Flat	179
Hoquiam	450314	DNR	Metar	46.93	123.90	S09-17N-10W	Flat	14

ZONE 650

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Ellis Mt.	450130	DNR	RAWS	48.15	124.31	S25-31N-13W	Ridge	2671
Clearwater	450202	DNR	Manual	47.60	124.30	S33-26N-11W	Valley	1063
Forks	450105	DNR	Manual	47.96	124.38	S04-28N-13W	Flat	303

ZONE 651

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Minot Peak	450306	DNR	RAWS	46.88	123.42	S10-16N-06W	Ridge	1768

ZONE 652

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Tom Creek	450911	USFS	RAWS	47.55	123.68	S06-23N-04W	E/Slope	2200
Owl Mt.	450211	DNR	RAWS	47.77	123.97	S11-26N-10W	Ridge	3398
Humptulips	450312	USFS	RAWS	47.37	123.47	S24-22N-09W	Ridge	2400

ZONE 661

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Hurricane Rdg	450124	NPS	RAWS	48.00	123.83	S36-29N-07W	Ridge	5000
Cougar	450117	USFS	RAWS	47.92	123.12	S09-28N-03W	Mid-slope	3000
Jefferson	450911	USFS	RAWS	47.55	123.68	S06-23N-04W	E/Slope	2200

ZONE 653

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Bellingham	451411	DNR	Metar	48.80	122.50	S10-38N-02E	Flat	150
Everett	451614	DNR	Metar	47.90	122.30	S22-28N-04E	Flat	603
Whidbey	450701	DNR	Metar	48.30	122.70	S15-33N-01E	Flat	54
Blue Mt.	450127	DNR	Manual	48.00	123.30	S34-30N-05W	SW/Slope	750

ZONE 654

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Bremerton	450801	DNR	Metar	47.50	122.60	S25-24N-01E	Flat	350
Quilcene	450207	USFS	RAWS	47.57	124.16	S24-27N-02W	Flat	50
Sea-Tac	451716	DNR	Metar	47.50	122.30	S33-23N-04E	Flat	450
Tacoma	451818	DNR	Metar	47.10	122.50	S14-18N-02E	Flat	322

ZONE 655

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Olympia	451001	DNR	Metar	47.10	12.80	S11-18N-01W	Flat	200
Chehalis	451103	DNR	Metar	46.60	122.90	S15--12N-2W	Flat	245

ZONE 656

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Abbotsford	451402	DNR	Metar	48.80	122.30	S31-39N-05E	Flat	200
Sedro Woolley	451507	DNR	Manual	48.50	122.20	S18-35N-05E	Valley	160
Marblemount	451504	NPS	Manual	48.54	121.44	S12-35N-10E	Valley	357
Darrington	451603	USFS	Manual	48.30	121.60	S14-32N-09E	Valley	550
Skykomish	451709	USFS	Manual	47.80	121.30	S35-26N-11E	Valley	936

ZONE 657

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
North Bend	451707	DNR	Manual	47.50	122.80	S10-23N-08E	Valley	480
Fire Training	451721	USFS	RAWS	47.45	121.66	S27-23N-09E	W/Midslope	1570
Enumclaw	451702	DNR	Manual	47.20	122.00	S30-20N-07E	Flat	742
Elbe	451803	DNR	Manual	46.80	122.30	S26-15N-06E	Valley	1200

ZONE 658

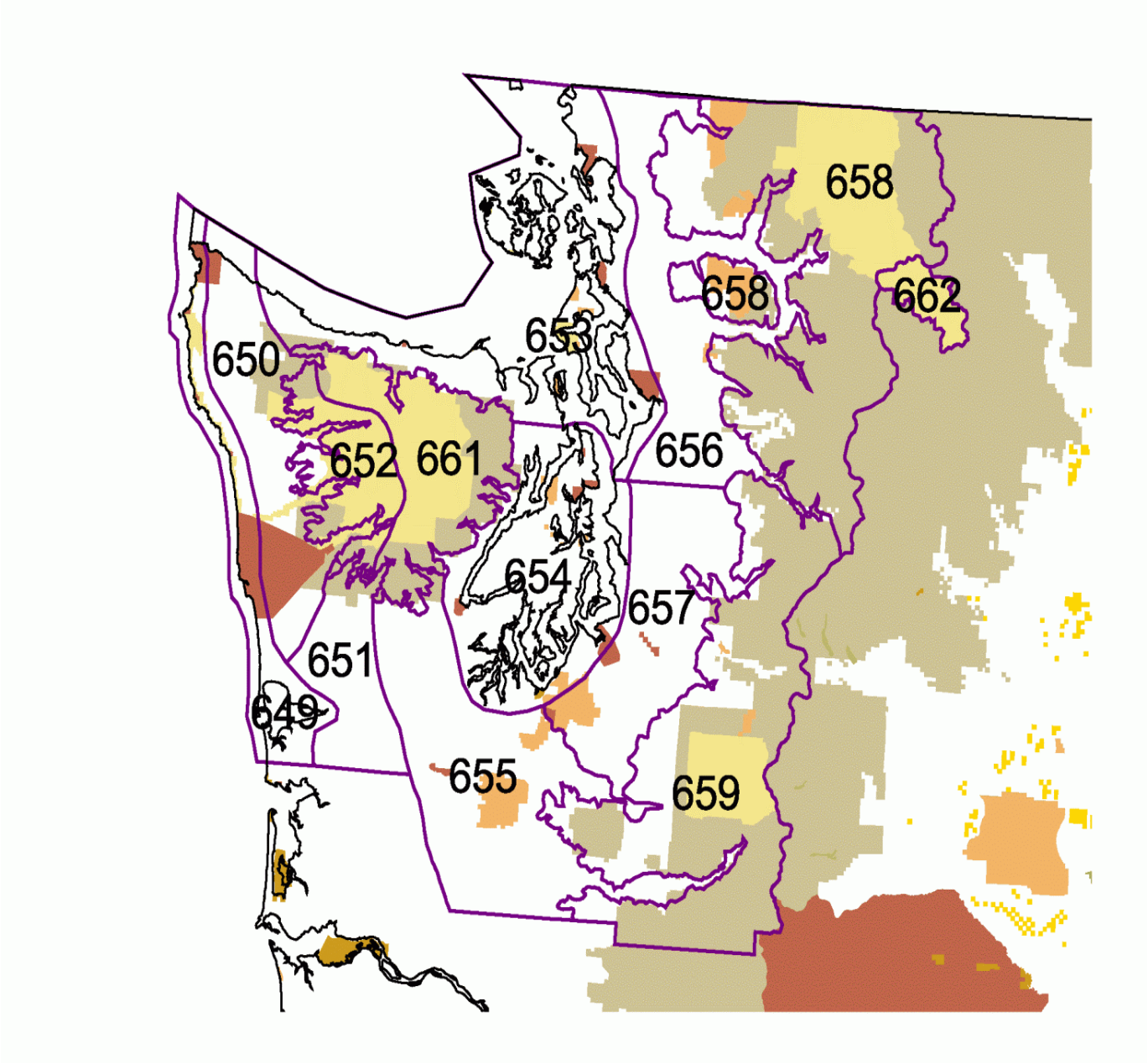
STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Kidney Creek	451409	USFS	RAWS	49.00	121.90	S16-40N-07E	Midslope	3000
Hozameen	451412	NPS	Manual	48.98	121.07	S02-40N-13E	Midslope	1615
Sumas Mt	451415	DNR	RAWS	48.90	122.23	S36-40N-04E	Ridge	3201
Finney Creek	451509	USFS	RAWS	48.40	121.80	S31-34N-08E	Midslope	1900
Gold Mt.	451613	USFS	RAWS	48.20	121.50	S33-32N-10E	Midslope	3400
Johnson Rdg.	451611	USFS	RAWS	47.80	121.27	S29-27N-12E	Midslope	2000

ZONE 659

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Stampede	451711	DNR	Metar	47.30	121.30	S25-21N-11E	Ridge	3967
Lester	451705	USFS	RAWS	47.20	121.50	S23-20N-10E	Valley	1615
Greenwater	451718	DNR	RAWS	47.10	121.60	S24-19N-09E	Midslope	2400
Kautz Creek	451812	NPS	Manual	46.90	121.90	S06-14N-08E	Valley	2326
Ohanapecosh	451119	NPS	Manual	46.73	121.57	S05-14N-10E	Valley	1900
Kosmos	451105	DNR	RAWS	46.60	122.20	S16-12N-05E	Ridge	2100
Hagar Creek	451115	USFS	RAWS	46.57	121.63	S36-12N-09E	Ridge	3600
Orr Creek	451919	USFS	RAWS	46.35	121.60	S17-10N-10E	Midslope	3000

ZONE 662

STATION	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
Stehekin	452121	NPS	RAWS	48.3	120.7	S02-32N-17E	Valley	1196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2003

Portland Fire Weather

Office Plan

National Weather Service
5241 NE 122ND Ave
Portland, Oregon 97230-1089

Portland Fire Weather

Location

National Weather Service Forecast Office
5241 NE 122nd Avenue
Portland, OR 97230-1089

Hours

The National Weather Service Office in Portland is open 24 hours a day, 7 days a week. The fire weather duty desk will be staffed with a certified fire weather forecaster between the hours of 7 am and 5 pm, 7 days a week during the fire season, normally from about Memorial Day through October. During the Spring burning season, approximately March to Memorial Day, the fire weather desk will be staffed with a fully dedicated and "fire weather certified" forecaster between the hours of 7 am and 3 pm, Monday through Friday.

Staff

Steve Todd	Meteorologist in Charge
Tyree Wilde	Warning Coordination Meteorologist
Scott Weishaar	Fire Weather Program Manager and IMET
John Saltenberger	Fire weather forecaster and IMET
Dave Willson	Fire weather forecaster
Clinton Rockey	Fire weather forecaster
Danny Mercer	Fire weather forecaster

Contact

Telephone:

Fire Weather Desk	(503) 326-2420
Lead Forecaster (24 hour)	(503) 326-3720
FAX	(503) 326-2598

Internet:

http://www.wrh.noaa.gov/portland/fwx.htm

Email:

scott.weishaar@noaa.gov
john.saltenberger@noaa.gov

Forecast District

Portland services fire weather zones 601_612 and 660. This area covers:

Northwest Oregon and Southwest Washington
North Oregon Cascades including the western Columbia Gorge
Central Oregon but not including the eastern portion of the Columbia Gorge
Southern Washington Cascades and adjacent lowlands of Clark County

See the attached map for a graphic description of individual areas/zones of the Portland district.

Agencies Served

U.S. Forest Service (USFS)
U.S. Bureau of Land Management (BLM)
U.S. Bureau of Indian Affairs (BIA)
Oregon Department of Forestry (ODF)
Washington Department of Natural Resources (WDNR)
Various urban and rural local fire districts.

Forecast Services

***GENERAL FORECASTS*:**

Fire Season: Regularly scheduled **general fire weather forecasts** are issued twice per day by "certified" fire weather forecasters during the fire season with issuance times at 09:00 PDT and 14:30 PDT.

Prescribed Burning Season: Regularly scheduled **land management forecasts** will be issued by certified fire weather forecasters with issuance times at 0900 PDT and 14:30 PST.

Winter: Approximately November through early March, regularly scheduled **land management forecasts** will be issued 3 times per day by the general forecast staff.

Forecast Services

SPOT FORECASTS

Detailed weather information beyond what is presented in the general forecast may be obtained with a **spot forecast.** Spot forecasts may be requested by a telephone call to the forecaster or through the spot forecast request web page available at the Portland fire weather web page URL listed above.

Spot Forecasts for prescribed burning: Spot forecast requests for prescribed fire are best initiated prior to 11 am on the planned day of the burn. Requests may also be entered into the spot forecast web page several days prior to the planned ignition. In either case, we request a weather observation be taken at the site of the burn within six hours of planned ignition and relayed to us. **A WEATHER OBSERVATION FROM THE BURN SITE MUST ACCOMPANY THE SPOT REQUEST. Spot forecasts will be valid 12 hours after planned ignition time. The user must request updates beyond 12 hours. Spot forecasts WILL be updated for unforeseen events. The appropriate agency (dispatch office) WILL be notified.**

Spot Forecasts for wildfires: Spot forecasts for wildfires may be requested at any time and will take priority over other station duties. Spot forecasts will be handled by one of the meteorologists certified in fire weather listed above. This may require that a certified fire weather forecaster be called in on overtime and the costs will be charged to the incident.

TELEPHONE BRIEFINGS

Daily Internet conference call: Portland fire weather conducts a daily weather briefing via a conference call in conjunction with the Pendleton office every morning during the fire season. Fire weather users are invited to participate. The forecaster hosting the conference call will verbally highlight current and forecast fire weather conditions with the help of an Internet web page. Conference call participants can follow along with the discussion while viewing the graphics displayed on the web page. Conference call times and telephone numbers with passwords can be obtained by can contacting the Portland weather office.

Unscheduled telephone briefings: Verbal weather briefings can also be obtained at any time via telephone. A fire weather certified forecaster should be requested to conduct such briefings during fire weather hours. Otherwise, a briefing will be available from the general forecast staff.

Forecast Services

FIRE WEATHER WATCHES and RED FLAG WARNINGS

Red Flag conditions are defined as those weather conditions that significantly elevate fire danger. Fire Weather Watches and Red Flag Warnings will be issued in accordance with Weather Service Operations Manual Chapter 10-4 section 401.

Fuels must be critically dry and fire danger high before a Red Flag Warning or Fire Weather Watch is issued from the Portland office. Evaluations of fuel condition will made in accordance with current NFDRS values and in consultation with fire managers. Assume these conditions are met, Fire Weather Watches and Red Flag Warnings are usually issued for the following events:

1. Combination of strong winds and low humidity

West of the Cascades - Almost exclusively issued for **foehn east winds and usually at night.**

ZONES 601, 602, 605, AND 607: **ONE RAWS** site within the zone reporting 35% RH or less and 10-minute average wind speed of 15 mph or greater for 4 hours in an 8-hour block **AND** one other RAWS reporting 35% RH and 10-minute average wind speed of 15 mph or greater for **ONE** hour.

ZONE 603: Rockhouse1 RAWS reporting 35% RH or less and 10-minute wind speed of 15 mph or greater for at least 4 hours in an 8-hour block **AND** one other RAWS reporting 35% RH or less and 10-minute wind speed of 10 mph or more for **ONE** hour.

ZONE 612: At least **ONE** RAWS reporting 35% RH or less **AND** 10-minute wind speed of 10 mph or more for 4 hours (in an 8-hour block).

ZONE 604: At least two stations reporting 25% or less RH and 2-minute wind speed of 15 mph or more for 4 hours (in an 8-hour block).

ZONE 660: At least **ONE** RAWS reporting 30% RH or less **AND** 10-minute average wind speed of 10 mph or more for 4 hours (in an 8-hour block) **AND** one other station reporting 30% RH or less and 10-minute average wind speed of 10 mph or more for **ONE** hour.

East of the Cascades - Primarily issued for winds associated with **marine pushes** or **dry cold fronts.**

ZONE 609: At least **ONE** RAWS reporting RH less than 20% **AND** 10-minute wind speed greater than 9 mph for 4 hours (in an 8-hour block) **AND** one other RAWS reporting the same for **ONE** hour.

ZONE 610: **TWO** stations for multiple hours:

A) HeHe Butte RAWS and Haystack RAWS reporting RH of 15 percent or less **AND** wind speed of 10 mph or more for 4 hours in a 9-hour block (afternoon and evening) **OR**

2. Critically dry and unstable airmass (Haines Index 6 type)

Criteria: Surface relative humidity < 25% westside and RH < 15%. eastside and Haines Index 6 (actual or estimated).

Forecast Services

B) HeHe Butte RAWS **OR** Haystack RAWS reporting RH of 15 percent or less **AND** wind speed of 10 mph or more for 4 hours in a 9-hour block (afternoon and evening) **AND** one other RAWS reporting the same for two hours.

ZONE 611: Any **TWO** stations (including Timothy RAWS) reporting RH of 15 percent or less **AND** wind speed of 10 mph or more for at least **TWO** hours.

CRITICALLY DRY AND UNSTABLE AIR MASS (HAINES INDEX 6 TYPE CONDITIONS):

RH of 25% or less on the west side or 15% or less on the east side and Haines Index of 6.

DRY LIGHTNING: Lightning occurrence that is scattered in coverage (or more) with “insignificant” rainfall. Generally no RAWS on the west side shows rainfall of .25 inches or more and no RAWS on the east side shows rainfall of .10 inches or more. RH must also be 25% or less on the west side and 20% or less on the east side.

Forecast Services

NFDRS TREND FORECASTS

A numerical **trend forecast** is prepared and disseminated to WIMS at about 16:00 PDT each afternoon during the fire season. This trend forecast is used to compute forecasted NFDRS indices valid for the following day. The number of NFDRS indices forecast by the weather office depends only on the number of NFDRS observations input into WIMS by the fire agencies. If observations are not entered into WIMS by 1500 PDT, indices will not be forecast.

PROBABILITY FORECASTS

Probability forecasts are included in the afternoon general fire weather forecast. See example below. These give the daily probability that various weather events will occur on each of the next five calendar days in selected fire weather zones. Some of these events are those which could prompt the issuance of a Red Flag Warning. Formal criteria for the probability forecasts are:

C *Wetting Rain* Half (or more) of the RAWS stations in the zone receive at least 0.10 inches of rain.

C *Lightning* Any lightning strikes in the zone.

C *Low Humidity* Half (or more) of the RAWS stations in the zone record a minimum humidity at or below the following values:

westside zones	**25%**
eastside zones	**15%**

C *Strong Winds* Half (or more) of the RAWS stations in the zone record a sustained 20 foot ten minute average wind speed at or above the following values:

westside zones	**15 mph**
eastside zones	**10 mph**

Example of 5 day probability forecasts:

5-day Probability Forecasts (Sunday through Thursday)

	Rain >.10	Lightning	Low Hum	Wind
Coastal Zones:	00000	00000	00200	00000
Zone 660:	00000	00000	02411	00032
Zone 605/607:	00000	00000	03521	00032
Zone 606/608:	00000	00000	04632	00042
Zone 609:	00000	00000	15653	00075
Zone 610:	00000	00000	26764	00054

Forecast Services

Other Services

INCIDENT METEOROLOGIST SERVICES

Portland has two certified Incident Meteorologists (IMETs) on staff available for wildfire dispatch during the fire season. To request an IMET contact the appropriate fire agency dispatch office.

FIRE WEATHER INSTRUCTION and LECTURES

An experienced fire weather forecaster will be available to help instruct the weather sections of standard fire behavior training courses offered by federal, state and local government fire agencies. This includes S-190 through S-590 and others. In addition, a forecaster will also be available for special speaking engagements. For scheduling purposes, requests for an instructor or speaker should be made at least 3 weeks in advance of the intended presentation.

NORTHWEST GACC SUMMER DETAIL

The Portland NWS office will detail an experienced fire weather forecaster to the Northwest Geographic Area Coordination Center (GACC) for 40 hours each week approximately 6 months each year. Duties will include publication of the regional fire weather operating plan, keeping GACC staff continuously advised of fire weather conditions and conducting daily “blast up” weather coordination calls. Duties also include participation in applied climate research projects under the direction of the regional fire weather program manager.

FORECAST VERIFICATION

The purpose of verification is to improve the quality of forecasts and warnings issued from the Portland weather office. Weather conditions are recorded and archived on a routine basis during the fire season. These observations are studied and compared against our forecasts and warnings to identify any systematic bias or consistent errors. Verification will focus on Red Flag Warnings but we will also verify individual NFDRS station forecasts for Fields RAWS , Pebble RAWS , Village Creek RAWS,, and Lava Butte RAWS. Verification results will be published in the Portland Fire Weather Annual Summary.

ANNUAL SUMMARY

A summary of climatic statistics, forecast and warning verification, fire danger trends and other noteworthy fire weather events is published at the end of each year. This summary will be available on the WWW or with a paper copy on request.

ANNUAL OPERATING PLAN

An annual operating plan (this document) describing NWS office services, responsibilities, and procedures will be published each year prior to fire season. The operating plan will be published on the WWW.

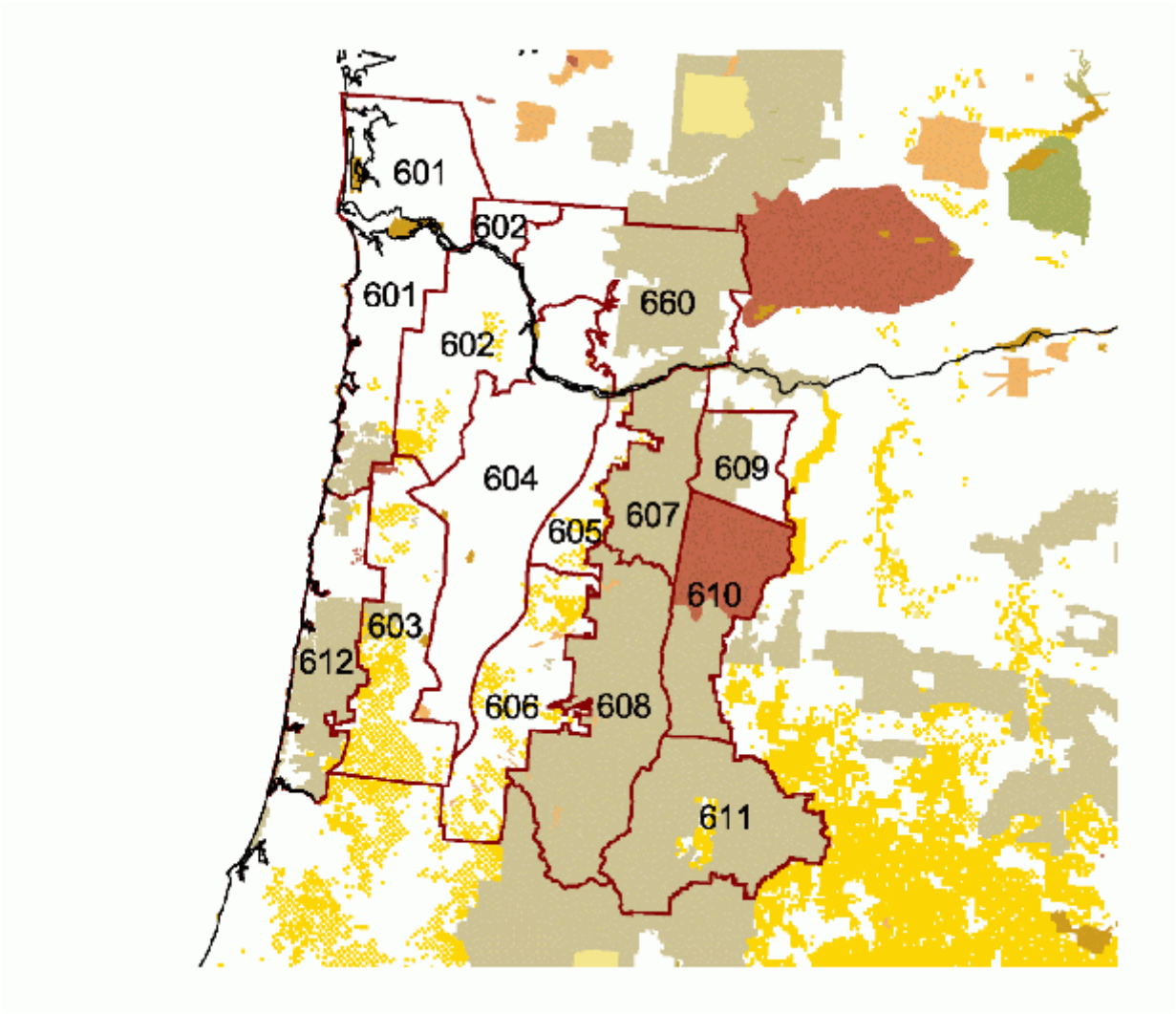
Other Services

OTHER DUTIES

- Maintenance of the Portland fire weather WWW page.
- Internal NWS staff proficiency training

Portland forecast district

Map and geographic descriptions



Zone 601 - North Oregon/South Washington Coastal Strip

Represents the south WA and north OR coastal strip including adjacent west slopes of the Coast Range. Includes the north portion of the Siuslaw NF and ODF and WADNR protected private land.

Extends east-west from the crest of the coast range to the Pacific Ocean. Extends north-south from the north boundary of Pacific County, WA to Oregon State Highway 22 along the eastern boundary of ODF regulated use area NW-2. The WA section of this zone represents Pacific and Wahkiakum Counties in their entirety.

Zone 612 - Central Oregon Coastal Strip

Represents the central Oregon coastal strip including adjacent west slopes of the coast range. Includes southern portions of the Siuslaw NF and ODF protected private land.

Extends east-west from the crest of the coast range to the Pacific Ocean. Extends north-south from Oregon State Highway 22 to the Umpqua River along the western edge of the Siuslaw National Forest including ODF regulated use area SL-2.

Zone 602 - East Slopes of the North Oregon/South Washington Coast Range

Represents the east slopes of the north Oregon/south Washington coast range. Mostly private land under ODF and WADNR protection.

Bounded on the west by the crest of the Coast Range and on the east by the western periphery of the Willamette Valley and Columbia River in Oregon and by the contour of the Willapa Hills/Coast Range in Washington. Extends north-south from the north boundary of Lewis County, WA to Oregon State Highway 22.

Zone 603 - East Slopes of the Central Oregon Coast Range

Represents the east slopes of the central Oregon Coast range. Mostly ODF protected private land.

Bounded on the west by the crest of the Oregon coast range and on the east by the western periphery of the Willamette Valley. The north boundary is along Oregon state highway 22 and the southern boundary lies along Oregon State Highway 38.

Zone 604 - Willamette Valley Including Clark County Lowlands of Washington

Bounded on the west and east by the foothills of the Coast Range and Cascades respectively in Oregon...Columbia River and foothills of the Cascades in WA portion. Extends north-south from Lewis River, WA to about Eugene, OR.

Zone 605 - North Oregon Cascade Foothills
Represents foothill elevations of the north Oregon Cascades. Mostly ODF protected private land.

Bounded by the eastern periphery of the Willamette Valley on the west and the National Forest boundary of the MT Hood NF and Willamette NF on the east. Extends from the Columbia River on the north to Oregon State Highway 22 (Santiam highway) on the south.

Zone 606 - Central Oregon Cascade Foothills

Represents foothill elevations of the central Oregon Cascades. Mostly ODF protected private land.

Bounded by the eastern periphery of the Willamette Valley on the west (Interstate 5 south of Eugene) and the Willamette Forest boundary and extreme northern Umpqua Forest boundary on the east. Extends from Oregon State Highway 22 on the north to the Lane/Douglas County line on the south.

Zone 607 - Mt Hood NF (west of Cascade Crest)

Represents all of the Mt Hood NF west of the Cascade crest along with interior Cascade wilderness areas.

Bounded by the Columbia River on the north, the Cascade crest on the east and the Mt Hood forest boundary on the south and west.

Zone 608 - Willamette NF

Represents the Willamette NF in its entirety along with interior high Cascade wilderness areas.

Bounded by the Cascade crest on the east and the Willamette Forest boundary on the south, west and north.

Zone 609 - East Slopes of North Oregon Cascades

Represents the portion of the Mt Hood NF that lies east of the Cascade crest as well as adjacent foothills under ODF protection.

Bounded by the Cascade crest on the west, Columbia River on the north and the northern boundary of the Warm Spring Indian Reservation on the south. The eastern boundary lies along Oregon State Highway 197 south to the Deschutes River; then follows the Deschutes River south to the Warm Springs Indian Reservation boundary.

Zone 610 - East Slopes of Central Oregon Cascades

Represents Warm Springs Indian Reservation and the Sisters RD of the Deschutes NF.

Bounded by the Cascade crest on the west and the boundaries of Warm Springs Reservation and Sisters RD on the north, east and south.

Zone 611 - Deschutes NF (minus Sisters RD)

Includes the Deschutes NF with the exception of the Sisters RD…includes interior islands of private land and high Cascade wilderness areas.

Bounded on the west by Cascade crest...on the north by the southern boundary of the Sisters RD...and on the east and south by the Deschutes Forest boundary.

Zone 660 - Extreme South Washington Cascades

Represents the Wind River, Mt. Adams and St. Helens ranger districts of the Gifford Pinchot NF as well as adjacent WDNR protected Cascade and Green Mountain foothills to the south and west. It excludes the Columbia River lowlands of Clark County, WA which is part of zone 604.

Bounded on the east by the the Gifford Pinchot eastern forest boundary (approximately the Cascade crest); The southeast boundary follows the Columbia river westward to the Clark County WA line; from there the boundary heads NNW following the contour of the Cascade foothills to the Lewis River; then westward along the Lewis River to the Columbia River; then the boundary follows the Columbia River northward to Kelso Wa; The northern boundary extends from Kelso northeastward following the contour of the Green Mountain/Cascade foothills to the Lewis County line; then eastward to the Cascade crest, bisecting the Gifford Pinchot NF along the northern boundary of the St. Helens and the Mt Adams ranger districts.

2003 PORTLAND NFDRS STATION INDEX

Zone	Number	Name	Type	Agency	Lat	Lon	Elev	Aspect	Twn	Rng	Sec
601	450404	WILLAPA	M	DNR	46.6	-123.6	60	FLAT	13N	08W	S10
	450407	HUCKLEBERRY	R	DNR	46.5	-123.38	2500	MIDSLOPE	12N	06W	S22
	350208	TILLAMOOK	R	ODF	45.26	-123.5	60	FLAT	01S	09W	S29
	350215	CEDAR CREEK	R	USFS	45.21	-123.77	2240	RIDGETOP	04S	09W	S22
602	350216	SOUTH FORK	R	ODF	45.56	-123.49	2120	RIDGETOP	01N	07W	S12
	350308	MILLER	R	ODF	46.02	-123.27	1090	RIDGETOP	06N	05W	S11
	350505	RYE MOUNTAIN	R	BLM	45.22	-123.53	1960	RIDGETOP	04S	07W	S09
	451207	CASTLE ROCK	M	DNR	46.3	-122.9	213	FLAT	09N	02W	S14
	451209	ABERNATHY	R	DNR	46.35	-123.1	2000	RIDGETOP	10N	03W	S19
603	351710	ROCKHOUSE1	R	ODF	44.93	-123.47	2000	MIDSLOPE			
	351811	WILKINSON RDG	R	USFS	44.33	-123.72	1370	RIDGETOP	14S	09W	S24
	352542	CLAY CREEK	R	ODF	44.02	-123.21	1600		19S	07W	S29
	352547	VILLAGE CREEK	R	BLM	44.25	-123.47	1500	RIDGETOP	16S	07W	S01
	352550	HIGH POINT	R	BLM	43.91	-123.38	1935	RIDGETOP	19S	06W	S23
604	451306	VANCOUVER	M	DNR	45.7	-122.7	210	FLAT	02N	01E	S28
	351911	STAYTON	R	ODF	44.75	-122.87	507	FLAT	09S	02W	S36
	351813	FINLEY	R	USFWS	44.42	-123.33	330				
605	350727	HORSE CREEK	R	BLM	44.94	-122.4	2000	RIDGETOP	07S	03E	S23
	350728	EAGLE CREEK	R	ODF	45.37	-122.33	744	MIDSLOPE	02S	04E	S28
606	352024	YELLOWSTONE	R	BLM	44.6	-122.42	3080	FLAT	11S	03E	S22
	352549	HAWLEY BUTTE	R	BLM	43.71	-122.84	3058	RIDGETOP	21S	01W	S29
	352552	TROUT CREEK	R	BLM	44.11	-122.58	2400	RIDGETOP	17S	02E	S09
	352553	BRUSH CREEK	R	BLM	44.28	-122.85	2300	RIDGETOP	15S	01W	S07

607	350718	RED BOX BENCH	R	USFS	45.03	-121.92	3250	MIDSLOPE	06S	07E	S23
	350725	SI SI LOOKOUT	M	USFS	44.92	-121.83	5617	RIDGETOP			
	350726	WANDERER'S PK	R	USFS	45.11	-122.2	4350	RIDGETOP	05S	05E	S28
	350811	BLUE RIDGE	R	USFS	45.52	-121.72	3780	RIDGETOP	01S	09E	S06
	350604	LOG CREEK	R	USFS	45.51	-121.9	2500	MIDSLOPE	01S	07E	S12
	350902	CLEAR LAKE	M	USFS	45.15	-121.58	4458	RIDGETOP			
608	352554	PEBBLE	R	USFS	44.23	-121.98	3560	MIDSLOPE	15S	07E	S29
	352557	FIELDS	R	USFS	43.73	-122.28	3360	RIDGETOP	22S	04E	S11
	352558	EMIGRANT	R	USFS	43.47	-122.22	3840	RIDGETOP	24S	05E	S21
	351909	BOULDER CREEK	R	USFS	44.98	-122	3570	VALLEY	10S	07E	S07
609	350912	POLLYWOG	R	USFS	45.46	-121.45	3320	MIDSLOPE	01S	11E	S29
	350913	WAMIC MILL	R	USFS	45.24	-121.45	3320	MIDSLOPE	04S	11E	S08
610	350909	SIDWALTER BUTTE	M	BIA	44.93	-121.54	3000	RIDGETOP	07S	10E	S27
	350916	MT. WILSON	R	BIA	45.03	-121.63	3780	MIDSLOPE	07S	13E	S32
	350917	MUTTON MTN	R	BIA	44.93	-121.19	4100	RIDGETOP	07S	13E	S32
	350920	HE HE 1	R	BIA	44.97	-121.49	2640	VALLEY	07S	10E	S13
	352102	SHITIKE BUTTE	M	BIA	44.74	-121.61	5000	RIDGETOP	09S	09E	S36
	352106	EAGLE BUTTE	M	BIA	44.84	-121.23	3100	RIDGETOP	08S	13E	S30
	352108	WARM SPRINGS	M	BIA	44.78	-121.25	1632	VALLEY	09S	12E	S24
	352110	METOLIUS ARM	R	BIA	44.61	-121.63	3440	VALLEY	11S	09E	S12
	352620	COLGATE	R	USFS	44.32	-121.61	3280	FLAT	15S	09E	S36
611	352605	ROUND MOUNTAIN	R	USFS	43.76	-121.72	5900	RIDGETOP	21S	08E	S13
	352618	LAVA BUTTE	R	USFS	43.93	-121.33	4655	RIDGETOP	19S	12E	S18
	352619	CAMP2	R	USFS	43.78	-121.05	4770	RIDGETOP	21S	14E	S02
	353342	BLACK ROCK	R	USFS	43.52	-121.81	4880	MIDSLOPE	24S	08E	S06
	353402	CABIN LAKE	R	USFS	43.5	-121.06	4545	FLAT	24S	14E	S17
612	351604	CANNIBAL MTN	R	USFS	44.35	-123.89	1946	RIDGETOP	14S	10W	S15
	352545	GOODWIN PEAK	R	USFS	43.93	-123.89	1826	RIDGETOP	19S	10W	S09
	352559	DUNES	R	USFS	43.96	-124.12	20	FLAT	18S	12W	S02
660	451208	ELK ROCK	R	USFS	46.35	-122.6	2500	RIDGETOP	10N	03E	S35
	451301	LARCH MOUNTAIN	M	DNR	45.7	-122.3	1150	RIDGETOP	03N	04E	S20
	451917	TROUT CREEK	R	USFS	46.12	-121.68	3600	MIDSLOPE	07N	09E	S08
	451921	CANYON CREEK	R	USFS	45.92	-122.17	2500	RIDGETOP	05N	05E	S08
	451922	CEDAR FLATS	R	USFS	46.13	-122.12	2320	RIDGETOP	07N	06E	S02
	451928	HAMILTON	R	DNR	45.7	-122.07	3000	RIDGETOP	02N	06E	S09

2003

Medford Fire Weather

Office Plan

National Weather Service
4003 Cirrus Drive
Medford, Oregon 97501

Medford Fire Weather

Location

4003 Cirrus Drive
Medford, Oregon 97501

Medford Fire Weather is located at the Medford National Weather Service Office near the Rogue Valley Airport in Medford Oregon. The office maintains 2 air transportable mobile units (ATMU) and 2 laptop computers with modem for on-site support of wildfires. Fire weather forecasts and other products are disseminated to state and federal agencies through AWIPS (NWS Communications systems), WIMS and through our homepage.

Telephone Numbers

24 hours a day, year round

Meteorologists are on duty 24 hours a day, 7 days a week. Additional forecasters will be brought in to staff for additional projects, severe weather, etc. However, under the provisions of the National Fire Weather Agreement, special service provided by the Medford office will be done on a reimbursable basis.

Primary Fire Weather...……..541-776-4332
Secondary Fire Weather.....541-776-4326
Fax.....……....541-776-4333

The homepage address is: **http://www.wrh.noaa.gov/Medford**

Staff

The Medford office is staffed with 13 full-time meteorologists. All forecasters participate in producing fire weather forecasts after each has completed the training, which includes correspondence course, computer-based Fire Weather Training Module, mesoscale analysis, climatological and terrain familiarization, and spot forecast training.

Roger Williams **Meteorologist-in-charge**

Forecast staff

James Reynolds	Warning and Coordination Meteorologist
Dennis Gettman	Science and Operations Officer
Frederic Bunnag	Senior Meteorologist (IMET)
Michael Stavish	Senior Meteorologist (IMET)
Michael O'Brien	Senior Meteorologist
Ryan Sandler	Senior Meteorologist
Jay Stockton	Senior Meteorologist
Mark Berteau	Meteorologist (Fire Weather trainee)
Robert Cramp	Meteorologist
Rick Holtz	Meteorologist
Sven Nelaimischkies	Meteorologist
Dan Weygand	Meteorologist
William Ludwig	Service Hydrologist

Forecast Services
(Continued)

FIRE WEATHER AND LAND MANAGEMENT FORECASTS

The Land Management Forecast is issued during the off-season, usually from mid-October to May. The forecast is available in WIMS and on the homepage daily by 7:30 AM. The frequency of the Land Management Forecast and the forecast elements may be increased as the fire season approaches. The Fire Weather Program manager will survey the user agencies throughout the off season to determine when extra forecasts are needed.

During the fire season, the Fire Weather Forecasts will be issued twice daily at 0730 and 1500 PDT. The forecast follows the national standard format introduced during the 2001 fire season. NFDRS zone trend forecasts for specific meteorological parameters are issued with the afternoon Fire Weather Forecast. When necessary, trend forecasts will be updated on the morning Fire Weather forecast on the following day.

The Medford Forecast Office will activate the internet fire weather briefing around the middle of May and continue through the end of the fire season. The briefing will be narrated by the forecaster on duty and the time will be determined according to agency needs. Every fire and land agency is encouraged to dial into the conference call and ask questions. The graphics for the briefing can be accessed via the Fire Weather Section of the homepage under the Fire Weather Briefing subsection. The dial-in phone number will be provided approximately one week before the briefing starts. Commencement time of this call will be coordinated with the fire agencies.

Forecast Services
(Continued)

FIRE WEATHER WATCHES AND RED FLAG WARNINGS

Fire Weather Watches and Red Flag Warnings will be issued when the following weather criteria are expected, in conjunction with certain fuel situations.

Fuel Situations that must be met are:
1000 hour fuel moisture < 15%
Live fuel moisture 120% or less
Annuals are cured.

The following weather criteria must be met:

Dry lightning outbreak

Coverage is scattered or greater.
Thunderstorm precipitation

- < 0.25 inch west of Cascades
- < 0.10 inch east of Cascades

Combination of Strong Winds with Low Humidity generally associated with the marine push or a dry cold front.

Zones 617 620 621 622 623

- RH < 15% AND 10 minute sustained wind 10 mph

Zone 624

- RH < 15% AND 10 minute sustained wind 15 mph

Zone 625

- RH < 10% AND 10 minute sustained wind 20 mph
- RH < 15% AND 10 minute sustained wind 25 mph
- RH < 20% AND 10 minute sustained wind 30 mph

Forecast Services
(Continued)

FIRE WEATHER WATCHES AND RED FLAG WARNINGS (cont)

East wind Event resulting in strong winds and Low Relative Humidity both at night and during the day.

Zones 618, 619, 620

RH Recovery < 25% AND 10 minute sustained wind 15 mph.

Zones 621, 622, 623

RH Recovery < 25% AND 10 minute sustained wind 10 mph.

Very Dry and Unstable Airmass

Haines Index forecast of 6 in conjunction with extremely dry fuel.

Forecasters will coordinate with the fire agencies when Haines Index 6 is forecast, whether fuel conditions warrant the issuance of the Red Flag Warning.

All Red Flag Warnings will be coordinated with the affected agencies and neighboring fire weather offices, in order to assess fuel conditions and general fire danger, before the issuance of a Red Flag Warning. Each issuance, update or cancellation of a Fire Weather Watch or Red Flag Warning will also be relayed by telephone to the dispatch office(s) affected by the watch/warning.

SPOT FORECAST

Spot forecasts are available year-round to federal land management agencies upon requests for wildfires, prescribed fires, spray projects and other land management activities. Spot forecasts are available to state forestry agencies and local fire departments for wildfire suppression only. Information required by the forecasters is found on WS Form D-1, items 1-12. Spot forecasts may be requested by filling out pertinent information in the Fire Weather Spot section of the Medford Weather Forecast Office homepage. They may also be requested using the WS Form D-1 with the information faxed to the Medford office or relayed by phone. We strongly encourage the fire agencies to call this office after submitting a spot request to ensure it was received properly. Attempts will be made to notify field personnel when there is significant changes in the expected weather. However, spot forecasts will be updated only when new observations become available, and/or the update is requested by the users. The forecast will be valid for 12 hours after the proposed ignition time.

Spot forecasts for wildfire suppression take precedence over normal office routines.

Forecast District

AREA 1...COAST (Zones 615 and 618)

This area extends from the Pacific Ocean to the foothills of the Coast Range, which rises to a crest of 2500 to 4500 feet, about 30 to 40 miles inland.

AREA 2...UMPQUA BASIN (Zones 616 and 617)

This area is located between the Coast Range and the crest of the Cascades mountains. The western portion of the area, mainly the Coast Range, varies in elevation between 2000 and 4500 feet, whereas the eastern portion rises to 4000 and 6000 feet with some peaks reaching as high as 8500 feet.

AREA 3...SOUTHWEST INTERIOR INCLUDING THE CASCADE AND THE SISKIYOU MOUNTAINS (Zones 619-623)

This area has complex terrain. The western boundary begins with the Coast Range, where elevations range from 3000 to 5000 feet. The area includes the Illinois Valley, the Siskiyou Mountain with peaks reaching as high as 7500 feet and the Rogue Basin. The area's eastern boundary includes the Cascade Mountains, where elevations can reach 6500 feet with a few peaks over 8000 feet high. Crater Lake is in the very northeast corner of this area.

AREA 4...EAST OF THE CASCADE MOUNTAIN (Zones 624 and 625)

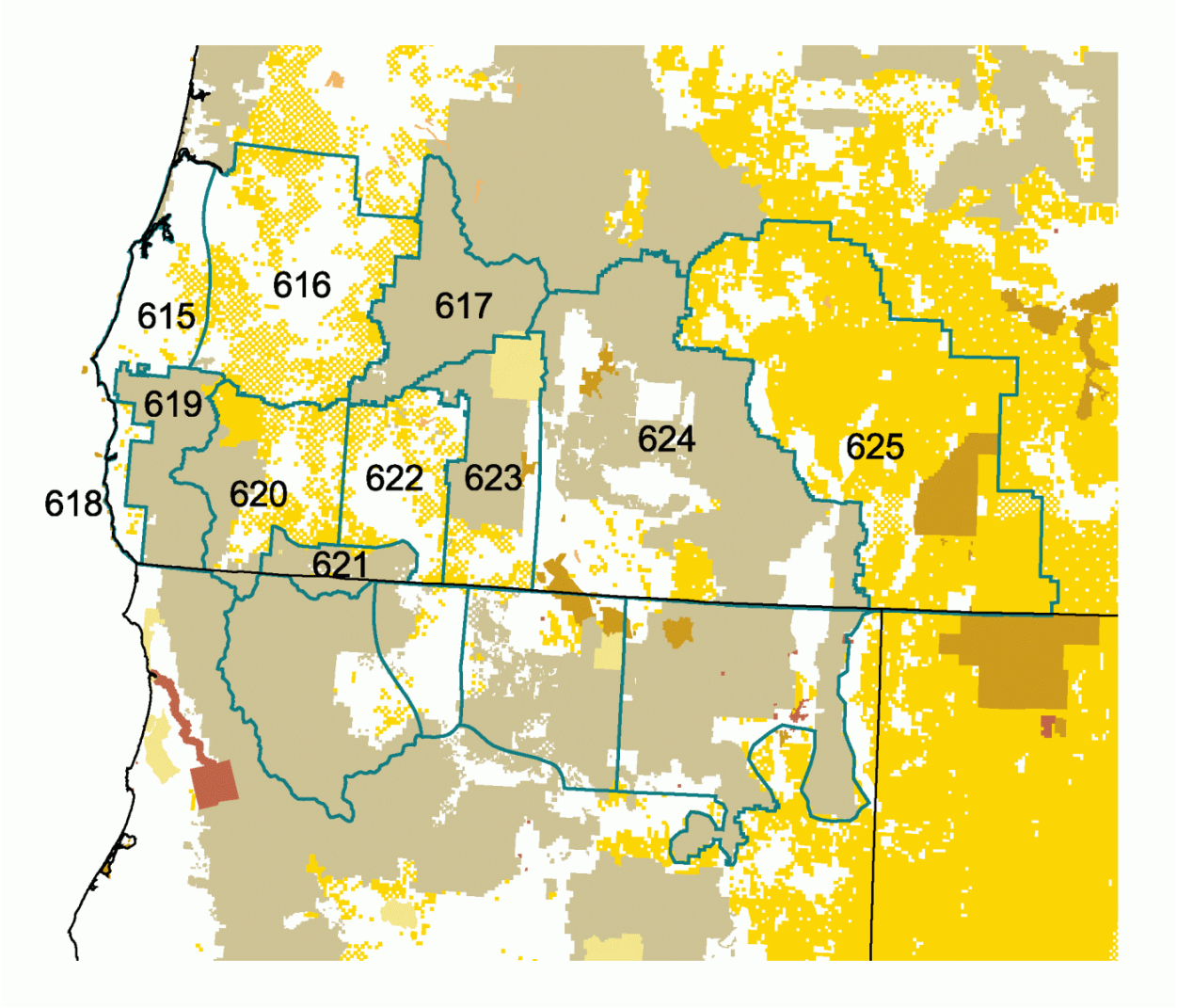
This area extends from the eastern foothills of the Cascade Mountains, with the elevation around 5000 feet, across the Klamath Basin with the elevation around 4000 feet. To the east of the Klamath Basin, this area includes a series of ridges, hills, then the Fremont Mountains and the Warner Valley on the northwest rim of the Great Basin. The eastern boundary of this area closely follows the border between Lake county and Harney county, and is representative of high plateaus with desert-like climate.

Medford Fire Weather Station Index

Station	Stn #	Agency	Type	Latitude	Longitude	Legal	Elev	Aspect
Zone 615								
Powers	352814	USFS	RAWS	42° 52' 12"	124° 03' 00"	S20-31S-11W	0286	S/Valley bottom
Zone 616								
Burnt Mt	353044	BLM	RAWS	43° 13' 09"	123° 50' 34"	S13-27S-10W	2240	S/Ridge
Elkton	353042	BLM	RAWS	43° 37' 45"	123° 37' 50"	S34-22S-08W	0850	S/Ridge
Silver Butte	353041	BLM	RAWS	42° 51' 32"	123° 22' 37"	S23-31S-06W	3973	W/Ridge
Mt Yoncalla	353043	BLM	RAWS	43° 38' 19"	123° 19' 32"	S24-22S-05W	1799	S/Ridge
Signal Tree	352816	BLM	RAWS	43° 00' 07"	123° 46' 49"	S04-30S-09W	3294	S/Ridge

Station	Stn #	Agency	Type	Latitude	Longitude	Legal	Elev	Aspect
Zone 617								
Buckeye	353040	USFS	RAWS	43° 02' 16"	122° 38' 16"	S23-29S-01E	2400	E/Ridge
Cinnamon	353031	USFS	RAWS	43° 15' 01"	122° 08' 59"	S31-26S-06E	4636	Valley Bottom
Butte	353031	USFS	RAWS	43° 15' 46"	122° 08' 54"	S31-26S-06E	4636	Flat/Ridge
Grandad	353036	USFS	RAWS	43° 24' 55"	122° 34' 37"	S09-25S-02E	2900	Flat/Ridge
Toketee	353038	USFS	RAWS	43° 14' 25"	122° 24' 35"	S12-27S-03E	3360	Flat/Mid Slope
Sugarloaf	352546	USFS	RAWS	43° 14' 00"	122° 23' 35"	S01-22S-02E	3500	NW/Mid Slope
Zone 618								
Red Mound	352920	USFS	RAWS	42° 07' 20"	124° 17' 45"	S07-40S-13W	1753	N/Mid Slope
Zone 619								
Bald Knob	352813	USFS	RAWS	42° 24' 00"	124° 02' 25"	S31-36S-11W	3630	S/Ridge
Lawson	352917	USFS	RAWS	42° 15' 12"	124° 05' 47"	S32-36S-12W	2810	S/Mid Slope
Quail Prairie	352915	USFS	RAWS	42° 14' 33"	124° 07' 48"	S30-38S-11W	3033	S/Ridge
Zone 620								
Illinois Valley	353115	USFS	RAWS	42° 06' 00"	123° 24' 00"	S10-40S-10W	1389	S/Valley
Calvert Peak	352919	BLM	RAWS	42° 46' 44"	123° 43' 58"	S23-32S-09W	3822	S/Ridge
Merlin	353116	ODF	RAWS	42° 18' 00"	123° 12' 00"	S06-38S-04W	1040	S/Valley
Onion Mtn	353114	USFS	RAWS	42° 18' 00"	123° 24' 00"	S03-38S-05W	4438	S/Ridge
Provolt	353120	BLM	RAWS	42° 16' 48"	123° 13' 48"	S12-38S-05W	1176	S/Valley
Agness	352916	USFS	RAWS	42° 19' 49"	124° 01' 20"	S32-37S-11W	0150	S/Valley
Zone 621								
Crazy Peak	40106	USFS	RAWS	41° 58' 35"	123° 36' 44"	S36-40N-08E	3970	SW/Ridge
Squaw Peak	353213	USFS	RAWS	42° 04' 12"	123° 00' 38"	S25-40S-03W	4964	S/Ridge
Star RS	353214	USFS	RAWS	42° 08' 56"	123° 03' 46"	S14-40S-03W	1675	SE/Mid Slope
Zone 622								
Evans Creek	353228	BLM	RAWS	42° 35' 52"	123° 06' 12"	S30-34S-03W	3200	Flat/Mid Slope
Buckhorn	353230	BLM	RAWS	42° 07' 13"	122° 33' 33"	S03-41S-02E	2900	Flat/Ridge
Zone 623								
Dead Indian	353225	USFS	RAWS	42° 17' 41"	122° 19' 47"	S03-38S-04E	5050	W/Mid Slope
Zim	353227	USFS	RAWS	42° 41' 50"	122° 23' 23"	S20-33S-04E	4106	SW/Ridge
Mt Stella	353209	USFS	RAWS	42° 56' 10"	122° 26' 14"	S26-30S-03E	4715	NE/Ridge
Panhandle	353333	NPS	RAWS	42° 46' 00"	122° 04' 00"	S25-32S-06E	4425	Flat/Valley
Seldom Creek	353339	USFS	RAWS	42° 24' 27"	122° 11' 29"	S35-36S-05E	4875	SE/Mid Slope
Parker Mtn	353344	BLM	RAWS	42° 06' 21"	122° 16' 41"	S07-40S-05E	5250	S/Ridge
Rover	353345	NPS	RAWS	43° 01' 10"	122° 00' 01"	S33-29S-06E	5350	SE/Mid Slope
Zone 624								
Calimus	353307	USFS	RAWS	42° 37' 53"	121° 33' 35"	S07-37S-12E	6620	S/Ridge
Chemult	353309	USFS	RAWS	43° 13' 18"	121° 47' 14"	S21-27S-08E	4629	Flat/Valley
Coffee Pot	353422	USFS	RAWS	42° 33' 00"	120° 37' 12"	S08-35S-18E	5250	S/Valley
Gerber	353328	BLM	RAWS	42° 12' 20"	121° 08' 20"	S11-39S-13E	4940	SW/Valley
Strawberry	353423	USFS	RAWS	42° 12' 00"	120° 50' 59"	S08-39S-16E	5590	S/Mid Slope
Timothy	353337	USFS	RAWS	43° 12' 00"	121° 22' 15"	S25-27S-11E	6020	S/Mid Slope
Chiloquin	353310	USFS	RAWS	42° 34' 37"	121° 53' 37"	S04-35S-07E	4517	S/Ridge
Hoyt	353343	USFS	RAWS	42° 58' 35"	121° 25' 19"	S16-30S-11E	5445	SW/Mid Slope
Summit	353421	USFS	RAWS	42° 12' 00"	120° 15' 00"	S09-39S-21E	6147	S/Mid Slope
Zone 625								
Fish Fin Rim	353516	BLM	RAWS	42° 28' 20"	119° 10' 42"	S10-36S-30E	4900	Flat/Valley
Fort Rock	353406	BLM	RAWS	43° 25' 57"	120° 50' 14"	S06-25S-16E	4430	Flat/Valley
Poor Jug	353426	BLM	RAWS	42° 55' 30"	120° 06' 30"	S34-30S-22E	4600	Flat/Ridge
Rock Creek	353424	USFS	RAWS	42° 32' 51"	119° 39' 23"	S10-35S-26E	5640	NW/Ridge

Medford Fire Weather Zone Map



2003
Spokane Fire Weather Office Plan

National Weather Service
2601 North Rambo Rd.
Spokane, Washington 98224-9164

Spokane Fire Weather

Location

The Spokane Fire Weather Office is located at the National Weather Service Office in Spokane.

Hours

Office hours at WFO Spokane for Fire Weather will be as follows:

Early Apr. _ Early Nov. Daily 24 Hour forecast coverage

Phone Numbers

C Fire Weather (509) 244_5031

C Public (509) 244_6395

C FAX (509) 244_0554

Staff

Name	Position
John Livingston	Meteorologist in Charge
Gary Bennett	Fire Weather Program Leader

Communications

All forecasts and spot forecasts are input into AWIPS (Advanced Weather Integrated Processing System), WIMS, and on Spokane's Internet home page. Users who do not have access to WIMS, or Internet can still have forecasts faxed to them.

Internet Address

http://www.wrh.noaa.gov/Spokane/fire.htm

http://www.wrh.noaa.gov/Spokane

Spokane Fire Weather

Forecast District

The Spokane Fire Weather Office has weather forecast responsibility for a large portion of protected lands in eastern Washington. Exceptions are the Blue Mountains area, the Yakama Indian Nation lands, the DOE Hanford Site, and Southeast Department of Natural Resources (DNR) land. These protected lands are now the forecast responsibility of the Pendleton Fire Weather Office.

Spokane Fire Weather's area of responsibility for Eastern Washington is divided into six districts for fire weather forecasting. In addition, these forecast districts are further sub_divided into ten fire weather zones. See the map for general locations of districts and zones for eastern Washington. The weather zones are comprised of fire danger stations with similar weather and similar trends in weather changes.

WFO Spokane has forecast responsibility for Central and Northern Idaho Panhandle. This district has one (1) zone (101) covering the Idaho Panhandle National Forests, Idaho State Lands, and Coeur d'Alene Indian Agency lands.

Forecast Services

Pre-suppression Forecasts

Issuance of pre-suppression forecasts are seasonal. Routine issuance of the first weekday, morning and afternoon forecasts begins sometime in the spring. Routine issuance of the morning and afternoon forecasts seven days a week normally begins in late June continuing through late October or early November. Specific start and stop dates are coordinated with user agencies. Morning forecasts will be available at 08:30 a.m., while afternoon forecasts will be available by 3:30 p.m.

Fire Weather Watches and Red Flag Warnings

General Fire Weather Watch and Red Flag Warning criteria continues to be under review. Until formal changes have been agreed upon by the Land Management agencies and the National Weather Service we will continue with the present criteria. Red Flag criteria for eastern Washington and Northern Idaho are as follows:

- Dry lightning and thunderstorms producing little or no precipitation (less than .20 of an inch)

- Sustained surface winds exceeding a 10 minute average of 15 mph combined with

- Relative humidity less than <15% in the Columbia Basin...<25% in the mountain areas and <20% in the lower valley zones. These conditions must be verified by at least 2 RAWS or METAR sites. Additionally, when using METAR sites wind speeds will be converted to 10 minute averages.

- Special consideration will be given whenever a combination of very hot temperatures with very low relative humidity exists.

The issuance of Red Flag Warnings will take into account fuel conditions, and will be coordinated with land management agencies and other applicable fire weather offices.
workers.

Forecast Services (Cont.)

Spot Forecasts

Official spot forecasts will be prepared and disseminated 24 hours a day. All prescribed fire spot forecast requests MUST BE accompanied by a recent weather observation from the burn site. Spot forecasts will be issued with a twelve hour window. If a fire has a longer duration, a new spot forecast must be requested.

“Spot forecasts are available year-round to all Federal, State and Local government entities for wildfire suppression, prescribed burns (for hazardous fuel reduction), search and rescue missions, HAZMAT incidents, or for any other land management activity that directly supports federal resources or the safety of civilians and forests. Spot forecasts cannot be provided to Local and State governments for non-fire/range management activities such as spray projects, road building, tree planting, recreational events, and prescribed burns (other than for hazardous fuel reduction) that do not have the potential to escape and threaten life and property."

IMETS (Incident Meteorologists)

Spokane Fire Weather Office will have a minimum of two certified IMET’S on staff with at least one available at all times during the high summer fire season.

SPOKANE TRANSPORT AND STABILITY FORECASTS

Due to a mandate to control air quality in “Designated Areas” surrounding Spokane, transport and stability forecasts will be provided for the area during the fire season. Forecasts will consist of an estimate of air mass stability, mixing height, and winds aloft below 7,000 feet. A forecast will be included with both the morning and afternoon pre-suppression forecasts as indicated above.

Non-Forecast Services

There are several duties that fall into the non-forecast services including, but not limited to teaching assignments, customer meetings, customer consultations, preparation of annual reports, preparation of annual operating plans, program management, research and in-house training of personnel.

There is a need for advanced notice for teaching assignments, customer meetings and consultations. The NWS-NWSEO Collective Bargaining Agreement provides rules for scheduling of bargaining unit employees. NWS management has limitations regarding modification of the work schedule after it has become “fixed” without paying overtime.

All requests for teaching assignments, customers meetings and consultations will be honored provided they are scheduled more than three weeks ahead of time, and they do not conflict with other Fire Weather commitments. NWS Spokane will make every effort to fulfill requests for teaching assignments, customer meetings and consultations that are scheduled with less than three weeks lead time, or conflict with other Fire Weather commitments. Shifts will be scheduled to complete the Annual Operating Plan and the Annual Report. Program management, research and training time will be provided to ALL employees based on needs of the office.

Fire Weather Program Leader - The NWS Spokane Fire

Non - Forecast Services (cont.)

and Fire Weather commitments. NWS Spokane will make every effort to fulfill requests for teaching assignments, customer meetings and consultations that are scheduled with less than three weeks lead time, or conflict with other Fire Weather commitments. Shifts will be scheduled to complete the Annual Fire Weather Operating Plan and the Annual Fire Weather Report. Program management, research and training time will be provided to ALL employees based on needs of the office.

Fire Weather Program Leader - The NWS Spokane Fire Weather Program Leader is Gary Bennett. High primary focus will be customer outreach, training, program development, IMET dispatches, and fire weather operational shifts.

Meeting Proficiency and Currency Standards -
All forecasters will complete required proficiency prior to working alone on any real time Fire Weather products and services.

Agencies Served

Land management agencies served by the Spokane Fire Weather Office include:

USFS....	Colville NF Wenatchee NF Okanagan NF Idaho Panhandle NF
BLM....	Spokane District
BIA....	Colville Indian Agency Spokane Indian Agency Coeur d' Alene Indian Agency
NWR...	Turnbull National Wildlife Refuge Columbia National Wildlife Refuge Priest River National Wildlife Refuge
Washington DNR...	Northeast Area Resource Protection Division
Idaho...	Department of State Lands
Other Public Agencies...	Coulee Dam National Recreation Area Lake Chelan National Recreation Area


Spokane Fire Weather Zones
685
687
684
686
658
682
677
682
673
680
676
675
681
631
635
609
633
634
638
60
0
60
120 Miles

Geographical Area Descriptions

The Spokane Forecast Office has fire weather forecast responsibility for the mountains and valley areas of northern and central eastern Washington and the northern and central Idaho Panhandle. The Pendleton weather office assumes responsibility for the southern areas of eastern Washington.

The Spokane Weather Forecast Office has fire weather forecast responsibility for protected lands in the northern and central part of eastern Washington. Exceptions are the Blue Mountains area, the Yakama Indian Reservation, and the Southeast Department of Natural Resources (DNR) protected lands. Forecasts for these areas are now handled out of the Pendleton Fire Weather Office (see zone descriptions below).

WFO Spokane's eastern Washington fire weather area is divided into six districts. In addition, these forecast districts are further sub_divided into ten fire weather zones. See the map for general locations of districts and zones for eastern Washington. The fire weather zones are comprised of fire danger stations with similar weather and similar trends in weather changes.

South Central District:

Consists of two zones. Zone 676 lower elevations and Zone 680 higher elevations. The south central district covers those areas of the southern Washington Cascades north of the Yakama Indian Reservation to Mission Ridge. The district boundary also runs west to east from the Cascade crest to Interstate 82. This includes the Naches and Cle Elum Ranger Districts of the Wenatchee National Forest. This district has pronounced climate differences, from the marine air influence near the Cascade crest, to the dry arid climate of the valleys. This district has a relatively low frequency of lightning, and averages about 10 storm_days per season from June through September.

Central District:

Has two zones. Zone 677 lower elevations and Zone 682 are the two zones in this district. This district extends from Mission Ridge north to the Sawtooth Ridge, and from the Cascade crest east to the Columbia River. It includes the northern part of the Wenatchee NF. Lightning frequency averages around 18 storm-days per season. The summer climate is similar to the South Central District, but winds tend to be stronger and more persistent, and day to day weather changes are more pronounced. This district contains some of the highest fire hazard areas in the Pacific Northwest.

Northern District:

Has three zones. Zone 687 is the Okanagan Highland zone. Zone 684 lower elevations, mainly the Okanagan River Valley, and zone 685 higher elevations of the North Cascades. This district extends across the north part of eastern Washington from the Cascade crest to the Kettle River Ranger District on the east. It includes the Okanagan NF, the Republic Ranger district of the Colville NF, land under the protection of Northeast Department of Natural Resources, and the western and central parts of the Colville Indian Agency. The marine influence is minimal in this district compared to the south central and central districts due to its more continental location. Winds are generally lighter than central and south central districts. Lightning activity though is greater, averaging about 35 storm_days per season.

Northeast District:

Zone 686. The northeast district extends from Kettle River to the Idaho border, and south to the vicinity of Spokane. It covers the remainder of the Colville NF and Indian Agency, as well as lands under the Northeast DNR. This district is normally more moist than the other districts since it extends into the western foothills of the Rocky Mountains. The southern portion around Spokane is the drier, windier section of this district. Lightning frequency is the greatest of any of the districts averaging 40 storm_days per season.

Northern Columbia Basin District:

Has one zone. Zone 673. Pendleton weather office has responsibility for all Washington State DNR Southeast Region lands, Yakama IA, and DOE Hanford. The southern boundary is I-90 for that part of the Yakima Firing Center in Kittitas County then follows county lines west to east across Grant, Adams, and Whitman Counties. The western part of the district boundary is the Columbia River at the Grant County line. The northern boundary is the same as previous years following the Columbia River to the eastern Ferry County then south across the northeast part of Lincoln County to I-2 near Davenport then east to the Spokane County line. Fuels in this district consist of mainly grass and sage. Zone 673 includes the Waterville Plateau which contains low ridges and coulees'. Most of the district is at fairly low elevations between 900 and 3,000 ft...with the exception being Badger Mountain near Waterville at 4,221 feet. Due to the relatively low elevations and locations, this is the warmest and driest district. Winds in some areas can be very strong. Lightning activity is the least of the districts, averaging about 6 storm_days per season.

Northern and Central Idaho Panhandle District:

This District is part of Region 1 and has one zone. Northern and Central Idaho Panhandle Zone 101 - Northern and Central Idaho Panhandle. This zone includes...Idaho Panhandle National Forests. Coeur d'Alene Indian Agency lands, and Idaho State protected lands in the following counties: Boundary, Bonner, Kootenai, Benewah, Shoshone, and the northern part of Latah county, where a part of the St. Joe District resides. Zone 101 is broken into three (3) separate zones the Northern zone, Central zone and Southern zone.

Spokane Fire Weather Station Index

NAME	NFDRS#	AGENCY	TYPE	LAT	LON	Asp	Elev
ZONE 673							
Douglas	452601	BLM	RAWS	47 37 12	119 53 24	SW FLT	2530
Spring Canyon	453201	BLM	RAWS	46 21 36	118 52 12	Valley	950
Escure	453601	BLM	RAWS	47 1 48	117 57 0	Flat	1653
Ephrata		FAA	METAR	47 10 48	119 17 60	Flat	1272
Moses Lake		FAA	METAR	47 6 0	119 13 48	Flat	1200
ZONE 676							
Yakima	452313	FAA	METAR	46 34 12	120 32 24	Flat	1066
Ellensburg	452203	DNR	RAWS	47 1 12	120 31 12	Flat	1560
ZONE 677							
Camp Four	452132	USFS	RAWS	48 1 12	120 51 36	SOUTH	3773
Chatter Cr.	452110	USFS		47 37 48	120 55 12	W Mid-	2300
Dry Cr.	452134	USFS	RAWS	47 43 12	120 31 48	SOUTH	3480
Wenatchee	452130	FAA	METAR	47 24 36	120 12 36	Valley	1255
Entiat	452106	USFS	RAWS	47 40 48	120 7 12	Valley	796
Leavenworth	452108	USFS	MANUAL	47 36 36	120 39 0	SE Mid-	1163
ZONE 680							
Sawmill	452221	USFS	RAWS	46 58 48	121 4 48	SW MID	3500
Sedge Ridge	452306	DNR	RAWS	46 17 24	121 0 0	Ridge	4300
Peoh Pt.	452206	DNR	RAWS	47 5 24	121 1 12	RIDGE	4020

Pine Mt.	452306	DNR	RAWS	46	36	0	121	0	0	Ridge	4300
ZONE 682											
Alpine	452127	USFS	MANUAL	47	46	48	120	50	60	N Ridge	6237
View Point.	452128	USFS	RAWS	47	30	36	120	32	24	SW MID	3760
Lk.Wenatchee	452107	USFS	MANUAL	47	49	48	121	46	48	Mid-slope	1800
Swauk	452219	USFS	RAWS	47	15	0	120	40	12	SOUTH	3773
Sugar Loaf	452116	USFS	MANUAL	47	45	0	120	31	48	N Ridge	5840
ZONE 684											
Conconully	452003	USFS		48	36	0	119	47	60	S Valley	2318
Doug-Ing	452035	USFS	RAWS	48	6	36	120	5	60	SLOPE	3460
Knowlton	452007	DNR	RAWS	48	6	36	119	53	24		3815
Kramer	452040	BIA	RAWS	48	15	36	119	31	12	RIDGE	2720
Nespelem	452009	BIA	RAWS	48	12	36	119	1	12	SW MID-	1782
NCSB	452030	USFS	RAWS	48	25	12	120	8	24	S	1650
Oroville	452039	BLM	RAWS	48	57	36	119	29	24	S SLOPE	1360
ZONE 685											
Aeneas	452001	DNR	RAWS	48	42	36	119	35	60	Ridge	5161
First Butte	452006	USFS	RAWS	48	37	12	120	5	60	S RIDGE	5500
Leecher	452020	USFS	RAWS	48	15	0	120	0	0	RIDGE	5019
83 Monument	452036	USFS	RAWS	48	37	12	120	5	60	S RIDGE	6500
Wash. Pass	452033	USFS	RAWS	48	31	12	120	39	0	SW	5460
ZONE 687											
Brown Mt	452514	USFS	RAWS	48	31	48	118	40	48	S SLOPE	3210
Gold Mt	452510	BIA	RAWS	48	10	48	118	29	24	RIDGE	4636
Lane Cr.	452511	USFS	RAWS	48	36	36	118	19	12	S SLOPE	4500
Lost Lake	452029	USFS	RAWS	48	51	36	119	3	36	MID-	3760
Owl Mt.	452513	USFS	RAWS	48	34	48	118	9	36	S SLOPE	4400
Peony Cr	452038	USFS	RAWS	48	35	24	119	12	36	N SLOPE	3600
ZONE 686											
Cedar Cr.	452917	USFS	RAWS	48	58	12	117	40	12	S SLOPE	4300
Colville	452903	DNR	MANUAL	48	30	36	117	54	0	S Ridge	1730
Deer Mt.	453412	USFS	RAWS	48	27	36	117	16	48	S SLOPE	3300
Flowery Tr.	453415	USFS	RAWS	48	17	51	117	24	14	VALLEY	2700
Midnight Mine	452913	BLM	RAWS	47	55	48	118	5	24	S RIDGE	2693
Pal Moore	452915	USFS	RAWS	48	22	48	117	25	12	S SLOPE	3120
Spokane	453505	NWS	METAR	47	35	24	117	31	12	FLAT	2365
Tacoma Cr	453413	USFS	RAWS	48	16	48	117	20	60	S SLOPE	3300
Kettle Falls	452916	NPS	RAWS	48	36	0	118	7	12	VALLEY	1310
Teepee Seed	453414	USFS	RAWS	48	36	0	117	28	12	VALLEY	3300
Wellpinit	452918	BIA	RAWS	47	52	35	118	5	46	S SLOPE	2240

2003

Pendleton Fire Weather

Office Plan

National Weather Service
2001 NW 56th Drive.
Pendleton, Oregon 97801-45324

FIRE WEATHER OPERATIONS PLAN

2003

PENDLETON DISTRICT

LOCATION:
The Pendleton Fire Weather Office is located at the National Weather Service Office in Pendleton.
2001 NW 56th Dr. Pendleton, OR 97801.

HOURS:
The Pendleton Fire Weather Program is committed to establishing a program with staffed trained to respond to fire weather needs 24 hours per day. In addition a Fire Weather shift will be scheduled during the following times:

Fire Season	7:00 AM - 4:00 PM 7 days a week Normally mid-June to late-September.
Land Management Season	8:00 AM - 4:00 PM 5 days a week. Normally early April - Mid June and late September - October.

The National Weather Service office in Pendleton is open 24 hours a day , 7 day a week and is fully staffed. If there is a need to support a project, additional forecasters can be made available. However, under the provisions of the National Agencies/NWS Agreement (see appendix A), special services provided by the Pendleton Fire Weather office will be done on a reimbursable basis.

PHONE NUMBERS

Fire Weather Desk	(541) 276-8134
General	(541) 276-4493
Fax	(541) 276-8253

INTERNET ADDRESS and E-MAIL: **http://www.wrh.noaa.gov/pendleton/**
mike.vescio@noaa.gov
dennis.hull@noaa.gov
robert.tobin@noaa.gov

STAFF

Name	Position
Mike Vescio	Meteorologist-in-Charge
Dennis Hull	Warning Coordination Meteorologist
Jon Mittelstadt	Science and Operation Officer

All Senior and Journeyman Forecasters will train on the Fire Weather desk. However a core group of forecasters will provide the majority of forecasts. The core group includes:

Name	Position
Bob Tobin Fire	Weather Program Leader / IMET
Joe Solomon	Senior Forecaster / IMET
Mary Smith	Senior Forecaster
Roger Cloutier	Senior Forecaster
Vincent Papol	Ssenior Forecaster

COMMUNICATIONS

All forecasts including spot forecasts are input into the National Weather Service communication system, WIMS and on Pendleton's Internet home page. Forecasts can also be faxed to customers who do not have access to these systems. Internet address is: **www.wrh.noaa.gov/Pendleton**

WEATHER BRIEFINGS

Internet based weather briefings will begin about the end of May. During Land Management season briefings will be held Monday and Thursday. During peak fire season, normally mid June-September briefings will be daily at 0930 PDT. Phone briefings are available 24 hours per day. **New for 2003 the briefings will include the National Weather Service Office in Portland and Land Management Agencies west of the Cascades.**

AGENCIES SERVED

USFS: United States Forest Service

BLM: Bureau of Land Management

NPS: National Park Service

BIA: Bureau of Indian Affairs

USF&W: United States Fish and Wildlife

ODF: Oregon Department of Forestry

DNR: Southeast Washington Area

County and Local Fire Jurisdictions in southeast Washington and central and northeast Oregon.

FORECAST SERVICES

Pre-suppression and Land Management Forecasts:

Routine land management forecasts are issued seasonally in the early and late part of the burning season. They are available twice a day Monday through Friday at 0900 and 1530 PDT. Specific start and stop dates are coordinated with customer agencies. Routine pre-suppression forecasts are available twice daily during the heart of the fire season, usually from mid June through late-September. They will be issued at 0900 and 1530 PDT. The afternoon forecast will contain numerical NFDRS zone trend data appended at the end.

Spot forecasts/Special request Forecasts:
Spot forecast are available year round for wildfires, prescribed fires, or any other critical land management activities **CONDUCTED BY ALL LAND MANAGEMENT AGENCIES.** The non-federal non-wildfire criteria no longer exits. We are urging land managers to customize spot forecast requests for the parameters that are needed and provide critical weather thresholds that may adversely impact the burn, such as wind, relative humidity, or burn period. This will allow the forecaster to concentrate on the specific data and time line needed rather than a host of parameters that may be of little interest. Spot forecasts take precedence over normal office duties. **New for 2003 the Region 6 National Weather Service offices will: *require at least one observation from the fire site for prescribed spot requests*. In addition valid times for spot forecasts will be 12 hours from issuance.**

Information required by the fire weather forecaster from the requesting agency is found on WS form D-1, items 1-12. A spot forecast for a planned ignition the next day may allow us to provide you with more lead time before the planned prescribed burn. **Feedback of how well the forecast verified is extremely valuable in order to provide more accurate subsequent forecasts.** As such the forecasters in Pendleton requests all observations taken from the burn site be sent to our office. This may be accomplished through FAX or electronically.

Spot forecasts requests will be accepted either, electronically via our internet web site: **www.wrh.noaa.gov/Pendleton**, or by fax at (541) 276-8253. Phone consultations are available 24 hours a day.

Numerical Probability Forecasts:
An ongoing experimental numerical probability forecast will be issued for Zone 632 and will be appended to the afternoon fire weather forecast. This segment of the afternoon Fire Weather Forecast provides numerical probability trends forecasts for selected parameters over a five day period. The parameters included will be:

* Probability of lightning anywhere in the zone
* Probability of a wetting rain, (.10 inch or more of continuous rainfall) anywhere in the zone
* Probability of average RH values less than 15% in the zone
* Probability of average sustained surface winds 14 mph or greater in the zone

Fire Weather Watches and Red Flag Warnings:
Please refer to the Glossary for the formal definitions of Fire Weather Watches and Red Flag Warning events. Specific Red Flag criteria differ for each situation and district. The following are some criteria which would warrant a Fire Weather Watch/Red Flag Warning in the Pendleton Fire Weather District:

Criteria:
Any or a combination of the following combined with very dry fuels are criteria for the issuance of a Fire Weather Watch or a Red Flag Warning depending on the lead time:

* Dry Lightning - Thunderstorms produce less than .10 of an inch of precipitation.
* Any lightning (wet or dry) - After an extended period of dry.
* Very low humidity, less than or equal to 10% in the afternoon with poor recovery at night...35% or less.
* A combination of low relative humidity , 15% and high Haines Index of 6.
* Strong winds combined with low RH's which meet the criteria which will be determined by the RH/WIND table shown below. 10 minutes average wind exceeding 15 mph and relative humidity < 15% in the Basin zones. 10 minute average wind exceeding 20 mph and relative humidity < 20% for the mountain zones. **Except for the southern portion of zone 630 south of the Maury Mountains.** Criteria will be 10 minute average wind exceeding 20 mph and relative humidity < 10% or 10 minute average wind exceeding 25 mph and relative humidity < 15% This must be verified by 2 RAWS sites for a minimum of 2 hours.

Table A. National Weather Service Pendleton Wind vs RH Red Flag/Fire Weather Watch Criteria Table
Note: This is only one element in determining the necessity for a Red Flag Warning or Fire Weather Watch and shall not be the solitary justification.

Columbia Basin ZONES 631 - 675

SUSTAINED 2O FT WIND OVER WIDESPREAD AREA (10 MINUTE AVERAGE in MPH)

	5	10	15	20	25	30
30						W
25					W	W
20				W	W	W
15			**W**	W	W	W
10			W	W	W	W

RH(%)

The Central and Northeast Mountains ZONES 630...632-635...638 AND ZONE 681

SUSTAINED 2O FT WIND OVER WIDESPREAD AREA (10 MINUTE AVERAGE in MPH)

	5	10	15	20	25	30	35
30							
25						W	W
20				W	W	W	W
15				W	W	W	W
10			W	W	W	W	W

RH(%)

A Red Flag Warning or Fire Weather Watch may be issued if the wind and humidity fall within the 'warn' section of the table AND fuels, both live and dead are dry.
1. The forecaster is required to check with fire/land management agencies to ensure that 1 hr and 10 hr fuels are dry enough to support active fire.
2. 1000 Hr fuel moisture less than 12% and 100 Hr fuel moisture less than 10%.

Dissemination:

Red Flag Warnings and Fire Weather Watches shall be issued using the Red Flag Statement (RFW) and will be headlined in the routine Fire Weather Forecast. All Red Flag Warnings and Fire Weather Watches will be cancelled using the Red Flag Warning Statement (RFW) and the Fire Weather Forecast will include a headline stating such.

All Red Flag Warnings will be disseminated utilizing the National Warning System (NAWAS) network

All issuances of Red Flag events will be coordinated beforehand with the agencies included in the watch/warning area and with adjacent fire weather offices if the watch/warning is for a zone on a common district boundary. In order to rapidly disseminate Fire Weather Watches/Red Flag Warnings or other information of rapidly changing or hazardous weather conditions that do not meet Red Flag criteria, but will affect fire control or pose a safety threat a priority calling list has been established. NWFO Pendleton will contact the following dispatch office who will provide the appropriate agency notification. If the primary dispatch office is not available, the backup dispatch office may be requested to conduct the notification.

Primary Phone Number:	541-278-3732 Umatilla Dispatch
First Backup:	541-963-7171 NE Oregon Dispatch
Second Backup:	541-575-1321 Malheur Dispatch
Third Backup:	541-416-6800 Central Oregon Dispatch

NON-FORECAST SERVICES

There are several duties that fall into the non-forecast services, including but not limited to teaching assignments, customer meetings, customer consultations, preparation of annual reports, preparation of annual operating plans, program management, research and in-house training of personnel.

There is a need for advanced notice for teaching assignments, customer meetings and consultations. The NWS-NWSEO Negotiated Agreement provides rules for scheduling of bargaining unit employees. NWS management has limitations regarding modification of the work schedule after it has become “fixed” without paying overtime.

All requests for teaching assignments, customers meetings and customer consultations will be honored provided they are scheduled more than three weeks ahead of time, and they do not conflict with other Fire Weather commitments. NWS Pendleton will make every effort to fulfill requests for teaching assignments, customer meetings and consultations that are scheduled with less than three weeks lead time, or conflict with other Fire Weather commitments. For training requests, please contact Bob Tobin at NWFO Pendleton (541) 276-5829 or robert.tobin@noaa.gov.

USER AGENCY RESPONSIBILITIES

There are several responsibilities of the user agencies including:

* 1300 PST NFDRS observations.
* Site observations for Spot forecast requests. **A representative observation from the burn site is required for all prescribed fire spot forecast requests.**
* Quality Control of RAWS observations
* Timely maintenance of RAWS sites.

FORECAST VERIFICATION

Routine verification will be made on Red Flag Warnings and Spot Forecast turnaround times. In addition selected NFDRS trend forecasts for temperature, relative humidity, and fuel moisture will be verified. Results of the verification will be published in the Fire Weather Annual Summary. The National Weather Service will work with local fire agencies and the Pacific Northwest Coordination Group to develop a baseline for product verification.

CUSTOMER EVALUATION PROCEDURES

The Pendleton Weather Service is currently developing a process where the customer can evaluate the procedures and products issued. Feedback and comments are very important for the success of the fire weather program. The National Weather Service will work with local fire agencies and the Pacific Northwest Coordination Group to develop a baseline for customer evaluation.

FIRE WEATHER FORECASTER PROFICIENCY AND CURRENCY STANDARDS

The National Weather Service proficiency standards for service to the fire weather users are shown in Appendix A. The National Weather Service and the Pacific Northwest Coordination Group will review the progress in meeting the standards. Prior to each fire season, the Annual Operating Plan will provide a list of currently qualified forecasters and those expected to be qualified at each weather Forecast office who will be providing fire weather services during the upcoming year.

FORECAST DISTRICT

The Pendleton Fire Weather District currently serves the northeast quadrant of Oregon, much of central Oregon east of the Cascade mountain range (Crook county, the east parts of Jefferson and Deschutes county, Umatilla, Union, Wallowa, and Baker counties), and a large portion of Southeast Washington (Benton, Franklin, Klickitat, Yakima Walla Walla, Columbia, Garfield and Asotin counties). Please see the district map for specific outlines of the Fire Weather Zones.

GEOGRAPHICAL AREA DESCRIPTIONS

The Pendleton Fire Weather forecast will be sectioned by Fire Weather Zone. This will result in 9 separate zone forecasts. These zones are based on terrain, elevation, weather characteristics, and political boundaries. The following are descriptions of each of the three Fire Weather Zones in the Pendleton Fire Weather district.

Central Oregon Mountains - Fire Weather Zone 630

This zone has the largest variability in terrain ranging from mountains with steep slopes, and narrow canyons to high elevation rolling hills, grasslands, meadows, and river valleys. Elevations range from about 3500 ft MSL to over 6000 ft MSL. Weather conditions can vary widely and are influenced by the terrain on a diurnal basis. Annual precipitation amounts range from near 10 inches on the grasslands to near 35 inches in the Ochoco mountains, with the majority of the precipitation occurring during the winter months. Heavy fuel loadings and the availability of ladder fuels in the higher elevations, give this area the potential to develop large, crowning project fires. Winds are generally light to moderate, but late day gusts often exceed 20 mph. July through September average between .50-.75 of precipitation due to scattered thunderstorms. This zone has a relatively low frequency of lightning with 15-20 thunderstorm days per year.

Columbia Basin of Oregon and Southeast Washington - Fire Weather Zone 631

This area is characterized as flat or smooth rolling hills in the Lower Columbia Basin of Northeast Oregon and Southeast Washington. Elevations range from about 200 ft MSL to approximately 3000 ft MSL along the foothills of the Blue Mountains. The weather in this area is characterized as warm to hot and dry during the summer with little precipitation, especially July through September. This is one of the two driest zones in the district. Precipitation averages range from 5-8 inches at the lowest elevations of the basin to near 20 inches along the foothills of the Blue mountains. The Cascade Mountains to the west and the Blue Mountains to the east have a considerable influence on this area. A “rain shadow” is often created from weather systems that move inland from the Pacific. Down slope foehn type winds are not uncommon during the fire season. The Columbia River Gorge frequently causes strong channeling of westerly winds into the area after a cold front passage, but with little rainfall. Gusts 20-25 mph are common on ridge tops. Occasional summer thunderstorms bring localized heavy rain, however average precipitation July through September is about .50 inches. This zone has a low frequency of lightning with around 5 thunderstorm days west of Arlington and 5-10 thunderstorm days east of Arlington.

Southern Blue and Strawberry Mountains - Fire Weather Zone 632

This zone is composed of varying and complex terrain, ranging from mountains with numerous steep sloped and narrow drainages to flat plateaus, meadows, and river valleys. Elevations range from about 3200 ft MSL in the John day valley to over 8500 ft MSL in the Strawberry mountains. Weather conditions vary widely and are largely influenced by the terrain on a diurnal basis. Winds are generally light to moderate and diurnal, however the higher elevation ridges can often report gusts 20-25 mph. Annual precipitation amounts range from less than 20 inches in some valleys to 50-55 inches in the highest mountains. The majority of the precipitation occurs during the winter snow season. July is the driest month averaging between .50-.70 of an inch. Otherwise June, August, and September average near 1 inch. This zone has a low to moderate frequency of lightning averaging 20-25 thunderstorm days per year.

Northern Blue Mountains - Fire Weather Zone 633

Terrain in this area is highly variable and complex, ranging from mountains with steep slopes and narrow canyons to flat plateaus, meadows, and river valleys. Elevations range from below 2500 ft MSL in the Grande Ronde valley to near 9000 ft MSL in the Elkhorn mountains. Weather conditions vary widely and are largely influenced by the terrain on a diurnal basis. Winds are generally light and diurnal, however there are two areas of concern. The north end of the district can be influenced greatly by strong gusty winds moving up the Columbia and Snake rivers and the Grande Ronde valley is heavily influenced by pre-frontal winds out of the southeast. Annual precipitation amounts range from 15-20 inches in some valleys to 40-45 inches in the highest mountains. The majority of the precipitation occurs during the winter months. July is the driest month averaging between .50-.70 of an inch. Otherwise June, August, and September average near 1 inch. This zone has a low frequency of lightning averaging about 20 thunderstorm days per year.

Eagle Cap District - Fire Zone 634

This area is entirely within the Wallowa mountains and the majority of Eagle Cap Wilderness area. Terrain in this area is very complex with high mountains and numerous very steep slopes and narrow drainages. Elevations range from below 3500 ft MSL to near 10,000 ft MSL. Weather conditions vary widely and are largely influenced by the terrain on a diurnal basis. Winds are generally light and diurnal, however the ridges can see sustained winds 20-25 mph. This is the wettest zone with annual precipitation amounts ranging from near 40 inches in the Minam and Lostine river canyons to over 80 inches in the highest mountains. The majority of the precipitation occurs during the winter months. This zone has a low to moderate frequency of lightning with around 25-30 thunderstorm days per year.

Wallowa District - Fire Weather Zone 638

This zone contains highly variable terrain as well, ranging from mountains with steep, narrow drainages to the deep canyons of the Snake and Imnaha rivers, to open, flat valleys. Elevations range from near 4000 ft MSL to near 6000 ft MSL. Weather conditions vary widely and are largely influenced by the terrain on a diurnal basis. Winds are generally light and diurnal, however the Snake and Imnaha rivers can have a large influence on the winds due to channeling and venturi effect. Annual precipitation amounts range from 15-20 inches in some valleys to 40-45 inches in the highest mountains. The majority of the precipitation occurs during the winter months. July is the driest month averaging between .50-.70 of an inch. Otherwise August and September average near 1 inch. This zone has a low to moderate frequency of lightning averaging about 25-30 thunderstorm days per year.

Eastern Washington Southern Columbia Basin - Fire Weather Zone 675

This area is characterized as a wide river basin with numerous west to east running ridge lines, and smooth rolling hills in the Lower Columbia Basin of Southeast Washington. Elevations range from about 200 ft MSL to just below 4000 ft MSL along the the Rattlesnake Hills. The weather in this area is characterized as warm to hot and dry during the summer with little precipitation, especially July through September. This is one of the two driest zones in the district with precipitation averages ranging from 5-7 inches near the Columbia river to 12 inches along the Rattlesnake Hills. The Cascade Mountains to the west and the Blue Mountains to the east have a considerable influence on this area. A “rain shadow” is often created from weather systems that move inland from the Pacific. Also, down slope foehn type winds are not uncommon during the fire season. The Columbia River Gorge frequently causes strong channeling of westerly winds into the area after a cold front passage, but with little rainfall. Afternoon gusts 20-25 mph are common on ridge tops. Occasional summer thunderstorms bring localized heavy rain, however average precipitation July through September is about .50 inches. This zone has a low frequency of lightning with around 5 thunderstorm days per year .

Yakama Alpine District - Fire Weather Zone 681

This areas covers the extreme southern Cascades crest down to the southern boundary of the Yakima Indian agency. Elevation ranges from near 1500 ft MSL to 5600 ft MSL. This district has pronounced climate differences, form the marine air influence near the Casacade crest, to the dry, desert climate near the Columbia River. Annual precipitation amounts range from less than 15 inches to over 40 inches. It is relatively windy with a low occurrence of lightning. It averages about 10-15 thunderstorm days per season from June through September.

Pendleton Fire Weather Station Index

ZONE 630

	STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
110	HAYSTACK	352107	USFS	RAWS	44:27:01	121.07.48	S12-13S-13E	S VALLEY	3240
119	BROWN'S WELL	353428	BLM	RAWS	43.33.40	120.14.55	S20-23S-21E	S RIDGE	4560
113	COLD SPRINGS	352701	USFS	RAWS	44.21.00	120.07.48	S18-14S-22E	S VALLEY	4695
117	SALT CREEK	352712	BLM	RAWS	44.02.40	120.39.58	S26-14S-17E	SW RIDGE	5670
116	BADGER CREEK	352711	USFS	RAWS	44.01.48	120.24.00	S02-18S-19E	SE SLOPE	5680
120	SLIDE MT.	352207	USFS	RAWS	44.27.45	120.17.14	S24-15S-25E	NE SLOPE	5700
112	BRIAR RABBIT	352208	USFS	RAWS	44.19.23	119.46.01	S30-14S-25E	S VALLEY	5900
	BOARD HOLLOW	352109	ODF	FTS	44.21.39	120.24.35	S14-14S-19E	RIDGE	4200
	MUTTON MTN	350917	BIA	RAWS	44.55.33	121.11.40	S32-07S-13E	RIDGE	4000

ZONE 631

	STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
126	UMATILLA NWR	351316	USFWL	RAWS	45.55.00	119.33.57	S18-05N-28E	FLAT	270
127	JUNIPER DUNES	453201	BLM	RAWS	46.21.54	118.52.46	S14-10N-31E	VALLEY	950
125	WALLA WALLA	453302	NWS PDT	MANUAL	46.06.00	118.17.00	S15-07N-36E	SW VALLEY	1166
124	PENDLETON	351307	NWS PDT	MANUAL	45.41.00	118.51.00	S06-02N-32E	S RIDGE	1482
123	PATJENS	351001	BLM	RAWS	45.19.20	120.55.30	S10-03S-15E	W RIDGE	2230
122	NORTH POLE RIDGE	350915	BLM	RAWS	45.01.42	120.32.20	S23-06S-18E	N RIDGE	3480
51	WASCO BUTTE	351919	ODF	RAWS	45.36.36	121.19.38	S05-01N-12E	SLOPE	2345
	MIDDLE MTN	350812	ODF	RAWS	45.34.58	121.34.58	S08-01N-10E	RIDGETOP	2600
	THE DALLES	452406	FAA	MANUAL	45.36.00	121.06.00	S34-02N-13E	VALLEY	210
	GOLDENDALE	452403	DNR	RAWS	45.52.02	120.43.23	S17–04N-16E	VALLEY	1650

ZONE 632

	STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
133	CASE	352329	USFS	RAWS	44.58.16	118.55.47	S12-07S-31E	S SLOPE	3800
128	TUPPER	351202	USFS	RAWS	45.04.15	119.29.24	S04-06S-27E	S SLOPE	4000
137	BOARD CREEK	352330	BLM	RAWS	44.35.36	119.16.40	S30-11S-29E	FLAT RIDGE	5000
132	KEENEY 2	352332	USFS	RAWS	44.39.58	118.55.15	S19-10S-32E	S VALLEY	5120
136	CROW FLAT	353515	USFS	RAWS	43.50.00	118.57.00	S19-20S-32E	W VALLEY	5130
134	ALLISON	353501	USFS	RAWS	43.55.29	119.35.40	S15-19S-26E	S VALLEY	5320
130	CRANE PRAIRIE	352305	USFS	RAWS	44.10.00	118.28.00	S25-16S-34E	S VALLEY	5500
131	FALL MOUNTAIN	352327	USFS	RAWS	44.17.38	119.02.31	S06-15S-31E	S RIDGE	5949
135	ANTELOPE	353524	BLM	RAWS	44.02.23	118.24.59	S04-18S-35E	SW RIDGE	6460
	MITCHELL	352209	ODF	FTS	44.34.55	122.10.34	S26-11S-21E	NW ALOPE	2620

ZONE 633

	STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
138	MEACHAM	351308	NWS PDT	AUTO	45.52	118.42	S34-01N-35E	E VALLEY	4058
140	EDEN	351518	USFS	RAWS	45.55.36	117.35.18	S30-05N-42E	S SLOPE	4200
141	ALDER RIDGE	453803	USFS	RAWS	46.27	117.49	S13-09N-42E	S SLOPE	4500
139	J RIDGE	351414	USFS	RAWS	45.06.50	118.24.14	S23-05S-35E	SE SLOPE	5180
144	BLACK MOUNTAIN	351317	USFS	RAWS	45.35.42	118.14.06	S06-01N-37E	RIDGE	5425
168	YELLOW PINE	352124	USFS	RAWS	44.31.35	118.19.23	S20-9S-39E	NE RIDGE	4600
	LAGRANDE	351417	ODF	FTS	45.33.10	118.00.43	S24-1N-38E	RIDGE	3100

ZONE 634

	STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
146	POINT PROM II	351419	USFS	RAWS	45.21.17	117.42.16	S21-02S-41E	W RIDGE	6607
142	MINAM	351416	USFS	RAWS	45.35	117.63	S20-04S-35E	VALLEY	4200

ZONE 635

	STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
148	ROBERTS BUTTE	351520	USFS	RAWS	45.40.54	117.12.23	S20-02N-45E	SW RIDGE	4263
147	HARLE BUTTE	351502	USFS	RAWS	45.19.09	116.52.03	S07-03S-48E	W RIDGE	6071
	JENNY 1		USFS	RAWS	45.06.00	116.55.48	S27-05S-41E	N SLOPE	4600

ZONE 638

	STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
164	BAKER AIRPORT	352419	NWS PDT	MANUAL	44.83	117.81	S33-08S-40S	FLAT VALLEY	3368
162	BLUE CANYON	352416	BLM	RAWS	44.40.12	117.56.01	S27-10S-39E	SW SLOPE	4200
163	SPARTA BUTTE	352418	USFS	RAWS	44.53.06	117.20.18	S31-07S-44E	S SLOPE	4278
165	FLAGSTAFF HILL	352123	BLM	RAWS	44.48.51	117.43.44	S06-09S-41E	W SLOPE	3945
167	MORGA N MTN.	352420	BLM	RAWS	44.31.00	117.17.00	S26-12S-44E	NE SLOPE	3600
169	ELK CREEK	352126	USFS	RAWS	44.45.28	117.58.16	S19-9S-39E	SW SLOPE	6576
168	YELLOWPINE	352124	USFS	RAWS	44.31.35	118.19.23	S17-10S-36E	NE RIDGE	4200

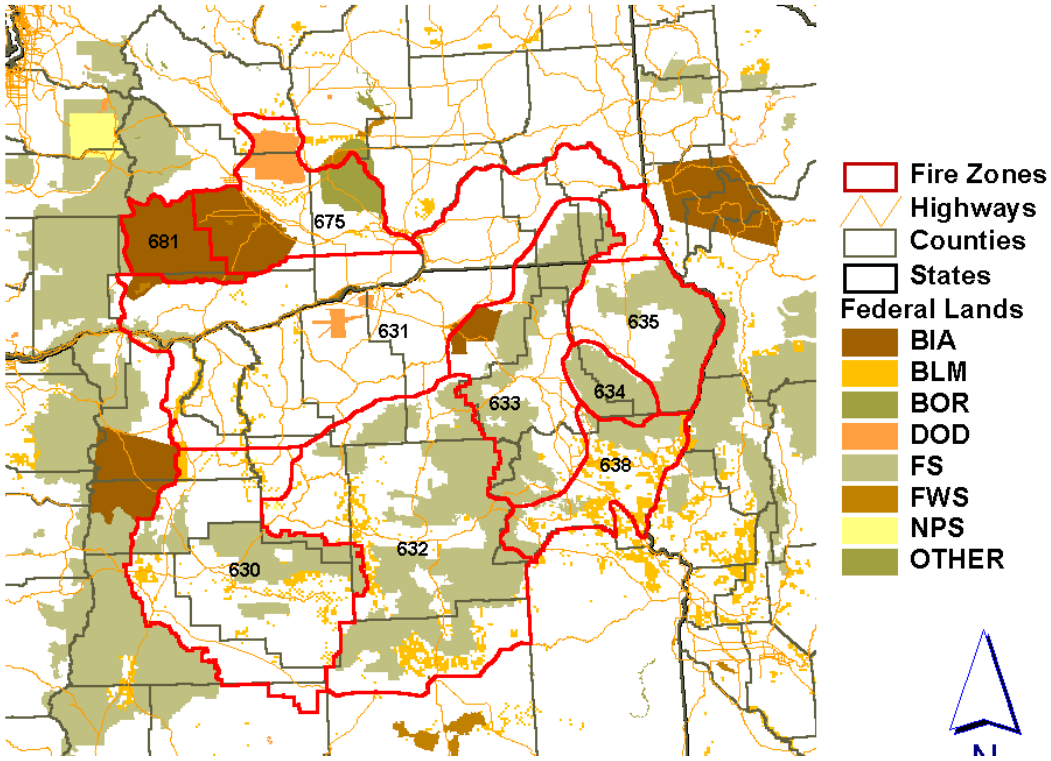
ZONE 675

STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
HANFORD	452802	FAA	MANUAL	46.57	119.6	S10-12N-26E	FLAT	732
MILL CREEK	452304	BIA	RAWS	46.15.45	120.51.44	S17-09N-16E	N VALLEY	2900
SADDLE MOUNTAIN	452701	USFWL	RAWS	46.41.40	119.41.37	S21-14N-25E	FLAT	650
COLUMBIA NWR	453102	USFWL	RAWS	46.52.15	119.19.30	S17-16N-28E	FLAT	890

ZONE 681

STATION NAME	NFDRS#	AGENCY	TYPE	LAT	LONG	LEGAL	ASPECT	ELEV
SIGNAL PEAK	452307	BIA	RAWS	46.13.37	121.08.15	S35-09N-12E	S RIDGE	5100
SEDGE RIDGE	452306	DNR	RAWS	46.29.42	121.00.48	S29-12N-14E	RIDGE	4300
TEPEE CREEK	452317	BIA	RAWS	46.09.47	121.01.56	S26-08N-14E	SOUTH	2980
GREYBACK	452404	DNR	RAWS	45.59.30	121.05.00	S7-06N-10E	SW MID SLOPE	3766

WFO Pendleton Fire Weather Zon



2003

Boise Fire Weather

Office Plan

National Weather Service
3833 S. Development Ave Bldg 3807
Boise, Idaho 97230-1089

2003 BOISE FIRE WEATHER OPERATING PLAN

I. TIMES OF OPERATIONS

Boise Fire Weather Office

4/07 through 5/15 Forecaster on duty 0800-1600 MDT, Mon-Fri
- One general forecast issued 1600 MDT, except another at 1000 MDT on Monday.

5/16 through 10/28 Forecaster on duty 0800-1700 MDT, 7 days - a week. Two general forecasts issued, 0930 and 1600 MDT.

Remainder of the year 0800-1600 MST, Mon-Fri. Forecasts as needed.

We will attempt to adhere to this schedule. However, some changes may occur when the office staffing is reduced due to wildfires, classroom instruction, sickness, etc.

This Forecast office is staffed 24-hrs a days, seven days a week throughout the year. Meteorologists trained in fire weather forecasting will be on duty and available for spot forecasts outside of normal fire weather working hours.

II. STAFF

Name	Position
Chuck Redman	Fire Weather Program Leader/ IMET
Mike Proud	Fire Weather Forecaster / IMET
Larry Van Bussum	Staff Meteorologist to NIFC / IMET

Some others that might fill in and work the Fire desk:

John Jannuzzi	Meteorologist in charge
Jeanne Allen	Forecaster
George Skari	Forecaster
Paul Flatt	Warning Coordination Meteorologist

Fire Weather Telephone Number	(208) 334-9862
Fax Number	(208) 334-1660

III. NEW FOR THE 2003 SEASON

None.

IV. CONTINUED FOR THE 2003 SEASON

The daily internet briefing will once again be offered for all agencies at 0930 MDT, seven days a week. This briefing will include a general discussion of weather conditions and forecasts for the current day, as well a brief discussion of the extended period. Model data, satellite loops, and other items of interest in the forecast period. During the briefing, the appropriate maps will be able to be viewed via the internet and the Boise Fire Weather website. The briefing should last approximately 15 minutes, or longer if necessary during times of significant fire activity. With this internet briefing, we will no longer be issuing a Noon update.

Last years procedure for requesting spots via the Boise Fire Weather homepage is back again for this year. Phone calls are still encouraged when requesting spot forecasts.

The discussion segment of the general forecast will continue to be limited to approximately 8 lines or less. This “short and sweet” description of the forecast will allow for the dispatch offices to transmit what they need in a short time, without having to take time to edit out unnecessary portions.

Smoke dispersal parameters in the form of mixing heights and transport winds will continue to be included in the daily fire weather forecasts. The mixing height is defined as the height above the ground (agl) through which relatively vigorous mixing will take place due to convection. The transport wind is defined as the average wins speed and direction within the mixing layer.

V. DESCRIPTION OF THE BOISE FIRE WEATHER DISTRICT:

Western Idaho/ Southeast Oregon

West Central Idaho Mountains...

Zone 401 - West portion of the Payette NF and Southern Idaho Timber Protection Agency (SITPA)
Zone 402 - East portion of the Payette NF
Zone 403 - North portion of the Boise NF
Zone 404 - south portion of the Boise NF and the extreme north portion of the Boise BLM

Southwest Idaho / Southeast Oregon...

Zone 636 - Portion of the Burns BLM that lies south of Highway 20.

Zone 637 - Vale BLM
Zone 408 - Boise BLM (except the extreme northern portion)

A map delineating the area and zone configuration is included in the appendix.

V. SCHEDULE OF PRODUCTS

Product:	Issuance time:
Morning forecast	0930
NFDRS trends forecast	1545
Afternoon forecast	1600
NFDRS trend forecast - Burns BLM	1630
Fire Weather Watch / Red Flag Warnings	When criteria is met
Spot forecasts	Upon request

The internet briefing will be held at 0930 MDT.

VI. WEATHER EVENTS THAT INDICATE RED FLAG CONDITIONS:

High to extreme fire danger and dry fuels must exist in combination with these weather events.

1. Scattered “dry” thunderstorm activity - “dry” means that thunderstorms will produce little or no measurable precipitation but a considerable amount of lightning. Isolated dry lightning is not enough to warrant a Red Flag.

2. The occurrence of lightning after an extremely dry period. Often this means that the thunderstorms will "initially" be dry.

3. The passage of a cold front which will result in sustained winds of 20 MPH or more, gusty, of a changeable nature, and accompanied by low humidities (i.e. less than 15 percent).

4. In the judgement of the forecaster, weather conditions and fire danger will combine to create a critical fire control situation, such as the combination of long term drought, very low humidities and high Haines indices of 5 or 6.

5. A matrix for wind vs. relative humidity was developed and will be used again this year. These winds must be sustained winds that last for 3 or more hours.

SUSTAINED 2O FT WIND OVER WIDESPREAD AREA (10 MINUTE AVERAGE in MPH)

	15	20	25	30
25				
20				W
15			W	W
10		W	W	W
RH(%)				

Work continues to modify these Red Flag criteria. Additional criteria may include live fuel moisture, 1000 hr fuel moisture and Energy Release Component (ERC) threshold values.

VII. FIRE WEATHER OBSERVATIONS:

There are a total of 33 fire weather observations in the Boise fire weather district. Of these, 4 are manual NFDRS stations, 26 are RAWS (Remote Automated Weather Systems), and one is an NWS station.

VIII. INTERNET ACCESS:

The Boise National Weather Service has a wide array of fire weather information located on the homepage. The address is:

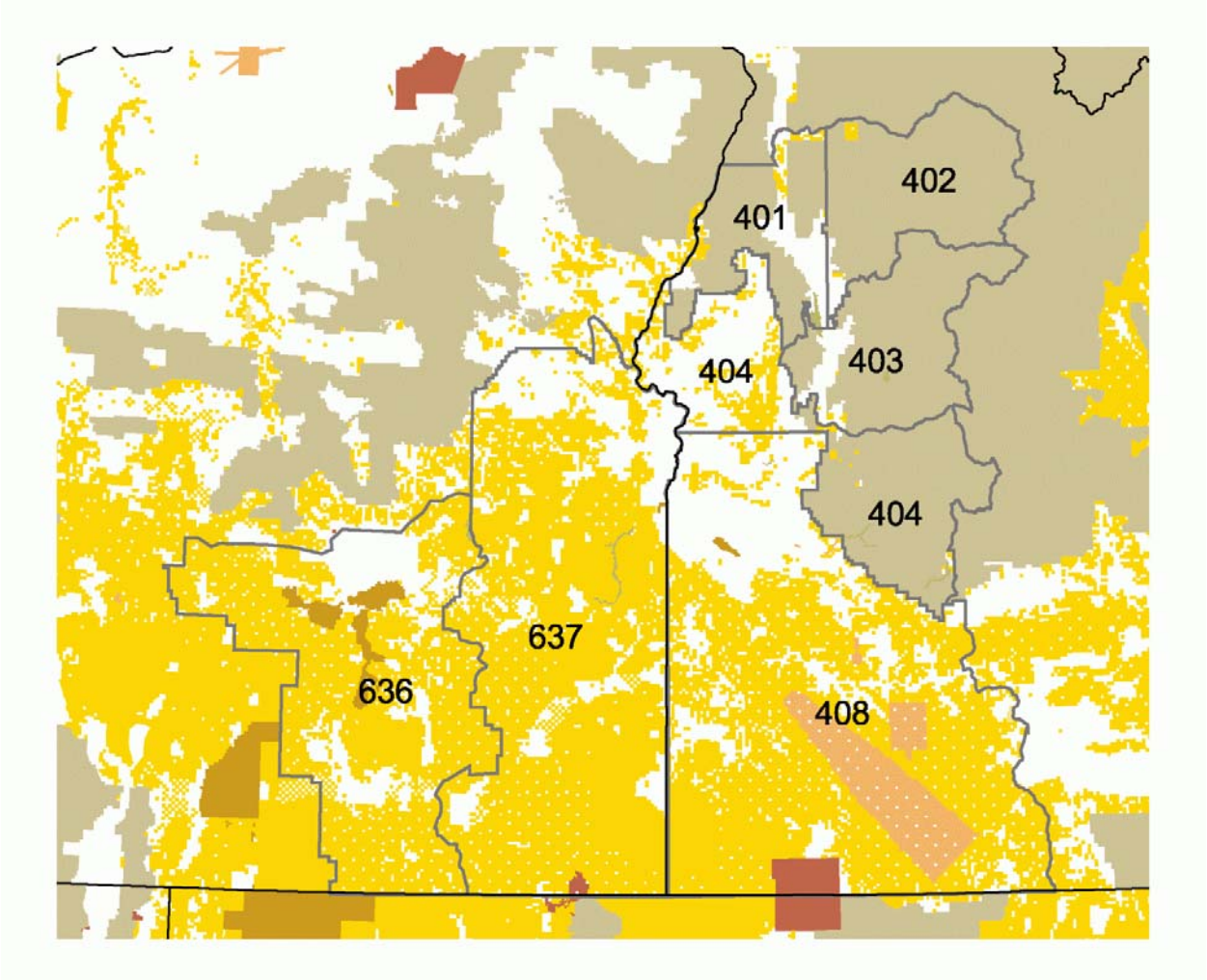
http://www.boi.noaa.gov/fwx.htm

IX. STATION INDEX:

STATION	STN #	RAWS ID	COUNTY	ST	AGENCY	LOCATION	SEC	TWP	RNG	ELEV
ZONE 401										
HORSE MTN	101103	MANUAL	ADAMS	ID	PAYETTE NF	45.07N 116.40W	26	21N	3W	6888
MCCALL	101209	MANUAL	VALLEY	ID	PAYETTE NF	44.54N 116.07W	8	18N	3E	5028
SKI HILL	101223	325E554C	VALLEY	ID	PAYETTE NF	45.11N 116.09W	35	19N	2E	5300
SNAKE RIVER	101109	325E8324	ADAMS	ID	PAYETTE NF	45.03N 116.43W	5	20N	2W	3500
WEISER RIVER	101108	325E60D6	ADAMS	ID	PAYETTE NF	44.30N 116.16W	35	18N	1W	3900
ZONE 402										
CAREY DOME	101004	MANUAL	IDAHO	ID	PAYETTE NF	45.24N 115.54W	24	24N	4E	7681
LODGEPOLE	101044	325E9052	IDAHO	ID	PAYETTE NF	45.22N 115.10W	35	24N	10E	5800
TEAPOT	101220	325E73A0	VALLEY	ID	PAYETTE NF	44.54N 115.44W	16	18N	6E	5152
ZONE 403										
BEARSKIN		3241D254	VALLEY	ID	BOISE NF	44.23N 115.31W	16	12N	8E	7113
PINE CREEK	101222	3241DC86	VALLEY	ID	BOISE NF	44.14N 116.11W	34	11N	2E	5600
LTL ANDERSON	101710	326BE772	BOISE	ID	BOISE NF	44.05N 115.52W	28	9N	5E	4560
ZONE 404										
DEAD INDIAN RIDGE	101402	3250B2D6	WASH	ID	BOISE BLM	44.19N 117.10W	3	11N	7W	3570
TOWN CREEK	101708	3241CFF0	BOISE	ID	BOISE NF	43.56N 115.55W	18	7N	5E	4500
ZONE 408										
BOISE (WFO)	102601		ADA			43.34N 116.13W	28	3N		
			OWHYEE	ID	BOISE BLM	42.21N 116.42W	34	12S	3W	4900
HORSE BUTTE	103205	32513638	OWHYEE	ID	BOISE BLM	42.25N 115.14W	6	9S	10E	5000
MOUNTAIN HOME	102709	3252C1B2	ELMORE	ID	BOISE BLM	43.01N 115.52W	33	4S	5E	3000
POLE CREEK	103210	3251B02C	OWHYEE	ID	BOISE BLM	42.09N 115.47W	5	16S	6E	5660
TRIANGLE	103208	32523136	OWHYEE	ID	BOISE BLM	42.49N 116.36W	16	7S	2W	5270
TWIN BUTTE	103209	3252B722	OWHYEE	ID	BOISE BLM	42.31N 115.09W	32	8S		
SHO-PAI	103211	3269C46A	OWHYEE	ID	NV - BIA	42.03N 116.39W	22	16S	2E	531
ZONE 636										
	353522		HARNEY	OR	BURNS BLM	43.33N 118.24W	22	23S	35E	5480
BASQUE HILLS	353520		HARNEY	OR	BURNS BLM	42.15N 118.59W	21	38S	32E	5080
FISH FIN RIM	353516		HARNEY	OR	BURNS BLM	42.28N 119.10W	10	36S	30E	4900
MOON HILL	353526	326543E2	HARNEY	OR	BURNS BLM	42.51N 118.40W	26	31S	32E	6100
P HILL	353521	32550698	HARNEY	OR	BURNS BLM	42.49N 118.56W	3	32S	32E	
RIDDLE MOUNTAIN	353511	3253C348	HARNEY	OR	BURNS BLM	43.06N 118.29W	35		34E	
WAGONTIRE	353512	3256E264	HARNEY	OR	BURNS BLM	43.20N 119.52W	6	26	24E	6420
FOSTER FLAT	353525	32653572	HARNEY	OR	BURNS BLM	42.58N 119.20W	14	30S	29E	5000

HINES	353519	MANUAL	HARNEY	OR	BURNS BLM	43.50N	119.05W				4232
	353517		HARNEY	OR	BUR	42.30N	119.10W	6	24S	29E	4400
GRASSY MOUNTAIN	353612	32443666	MALHUER	OR	VALE BLM	42.38N	117.25W	12	34S	43E	4000
KELSEY BUTTE	353613	3279797A	MALHUER	OR	VALE BLM	43.55N	117.58W	19	19S		
OWHYEE RIDGE	353614	32799388	MALHUER	OR	VALE BLM	43.21N	117.12W	9	23S	45E	4400
RED BUTTE	353616	325DB1B0	MALHUER	OR	VALE BLM	43.32N	117.48W	27	23S	40E	4460

X. APPENDIX: BOISE FIRE WEATHER ZONE MAP



APPENDIX A

FIRE WEATHER FORECASTER PROFICIENCY AND CURRENCY

A. Proficiency

1. Completion of fire weather forecaster training requirements (defined in ROML W-20-99). In addition, items 7,8 and 9 under the Meteorologist Baseline column in appendix B will be required for this agreement.

2. Work no less than 5 shifts with a qualified fire weather forecaster, handling all duties of that shift including(but no limited to) the preparation and issuance of:
-routine fire weather forecasts (pre-suppression).
-spot forecasts
-briefings
-non-routine forecasts
As many training shifts as possible should be worked during the critical fire weather season

3. WFO Fire Weather Program Leader and appropriate WFO Management concur and sign off on proficiency.

B. Currency

1. Forecaster has prepared and issued 15 fire weather forecasts in past year.

2. Forecaster has prepared and issued 10 percent of office spots or 5 spots in past year or completion of an IMET assignment.

C. Proficiency Renewal

Purpose: To renew fire weather proficiency of a forecaster if they have not met currency standards in element B.

1. Forecaster works no less than 3 shifts with a qualified fire weather forecaster or successfully complete drill(s) which includes key aspects of local fire weather program.

2. WFO Fire Weather Program Leader and WFO Management concur and sign off on proficiency.